1972

Environmental Regulation of Power Plant Siting: Existing and Proposed Institutions

A. Dan Tarlock
Indiana University School of Law

Roger Tippy
Massachusetts Environmental Protection Division

Frances Enseki Francis
Federal Power Commission

ENVIRONMENTAL REGULATION OF POWER PLANT SITING: EXISTING AND PROPOSED INSTITUTIONS

A. DAN TARLOCK,* ROGER TIPPY,** FRANCES ENSEKI FRANCIS***

INTRODUCTION

Electric energy requirements for the nation are expected to increase by 250 per cent over present levels by 1990.[1] Accordingly, we must plan now for the regulation of the design and location of the nuclear and fossil fuel power plants and transmission lines necessary to meet this developing need. However, because the power plants may cause both thermal and air pollution, as well as landscape blight, their regulation must be viewed, not as an isolated problem of meeting demands for electricity, but in conjunction with the nation's emerging environmental management policies.[2] This article will analyze the legal methods for compelling regnlatory agencies to consider and assess the environmental impact of this future power source development. In many instances protection of environmental values will increase the cost of the production and distribution of electricity, and hard policy choices will have to be made between the benefits of environmental enhance-

* A.B. Stanford, 1962; LL.B. Stanford, 1965; Associate Professor of Law, Indiana University, Bloomington.

** A.B. Stanford, 1962; LL.B. Yale, 1965; Assistant Attorney General (Environmental Protection Division), Commonwealth of Massachusetts.

*** A.B. Dickinson College, 1962; LL.B. Yale, 1965; M.P.A. Harvard, 1969; Attorney, Federal Power Commission, 1965-1970.

The opinions expressed in this article are personal to the authors and do not reflect the policy of institutions with which they have been or are now associated.

Professor Tarlock would like to express appreciation to the Law Center of the University of Southern California, where he was a Visiting Associate Professor in the Spring of 1971, working on the University's Sea Grant Program, funded by the National Oceanographic and Atmospheric Administration, U.S. Dept. of Commerce, and to Professor Michael E. Levine, principal investigator for the project.

1. Federal Power Commission, Accompanying Statement of Federal Power Commission Chairman John N. Nassikas printed in *Trends and Growth Projections of the Electric Power Industry, Environmental Effects of Producing Electric Power, Hearings Before the Joint Comm. on Atomic Energy*, 91st Cong., 1st Sess., 53, 54 (1970) [hereinafter cited as *1969 Atomic Energy Hearing*].

2. *See generally* A Review of Energy Issues and the 91st Congress, Prepared by the Environmental Policy Division Congressional Research Service, Library of Congress at the request of Henry M. Jackson, Chairman, Committee for Insular Affairs, United States Senate, 92d Cong., 1st Sess. (1971).

ment and economic efficiency.[3] It will be assumed that the demand for power will continue to increase and that the most fruitful method of minimizing the adverse effects is to concentrate on questions of site location and national fuels policy.[4]

The assessment of technology is one of the most complex problems facing both industry and those public officials charged with the protection of the environment. Historically we have assessed potential technological developments without serious concern for their secondary consequences, and as a result we have often suffered major social costs as by-products.[5] Therefore, if scientific and technological developments

3. Aggregate cost data for pollution abatement and environmental enhancement are difficult to project because each plant's optimal programs may consist of different sets of alternatives and therefore clear policies specifying the level of control required do not exist. A 1969 report prepared for the National Coal Conference, Inc. projected maximum costs for thermal pollution abatement between 1970-80 ranging from 2,464 million dollars for a "practical maximum" policy to 6,855 million for a "pristine" purity policy which required all existing and future plants to recycle their own cooling water. Cheney & Smith, *A Systems Analysis of Aquatic Thermal Pollution and its Implications, Vol. I, Summary Report*, reprinted in WATER POLLUTION—1969 HEARINGS BEFORE THE SENATE SUBCOMMITTEE ON AIR AND WATER POLLUTION OF COMMITTEE ON PUBLIC WORKS ON S. 7 AND S. 544, at 45, 71 (1969) [hereinafter cited as WATER POLLUTION—1969].

At the present time it is impossible to compute precise cost-benefit ratios for these choices. For example, to devise a tax system based on the full social marginal cost of a discharge of residuals, "the government would have to estimate literally billions of tax rates. This is because almost every production process or act of consumption contributes a different mix of wastes to the total waste flow of the economy." d'Arge & Hunt, *Environmental Pollution, Externalities, and Conventional Economic Wisdom: A Critique*, 1 ENVIRON. AFFAIRS, 266, 279 (1971). *See also* Krier, *The Pollution Problem and Legal Institutions: A Conceptual Overview*, 18 U.C.L.A.L. REV. 429, 437 (1971).

4. *See* Starr, *Energy and Power*, SCIENTIFIC AMERICAN, September, 1971, at 37-40. This article will be concerned with the structure of existing and proposed regulatory procedures and with state and federal regulatory policy. It will not directly consider the role of citizen suits in influencing power plant site selection, although such suits play a very useful role in the current site selection process as they insure a more consistent presentation of alternative viewpoints than do hearings before licensing agencies charged with environmental protection. They also assemble and present information unknown to or ignored by public agencies. However, citizen groups have less incentive to undertake the long range planning necessary to develop a rational site selection policy and thus we have chosen to focus on the institutional basis for this kind of decision-making. For a discussion of the newly developing concept of a public right of action *see* Hanks & Hanks, *An Environmental Bill of Rights: The Citizen Suit and the National Environmental Policy Act of 1969*, 24 RUTGERS L. REV. 230 (1970). Note, *The Role of the Judiciary in the Confrontation with the Problems of Environmental Quality* and Comment, *Thermal Electric Power and Water Pollution: A Siting Approach*, 46 IND. L.J. 61 (1970). The case for a litigation approach to these problems is made in J. SAX, DEFENDING THE ENVIRONMENT (1970) and Sive, *The Role of Litigation In Environmental Policy: The Power Plant Siting Problem*, 11 NAT. RES. J. 467 (1971).

5. The problem is that although the benefits of technology are brought before the public, the "negative factors and risks are never fully or even adequately articulated."

are to continue at their current exponential rate it is clearly imperative that the present assessment methods be improved. This problem is compounded by the fact that the most complex ecosystems are also the most stable. Thus, any large-scale use of technology which replaces a complex ecosystem with a simple one may, in the long run, create very unstable systems. Further, the effects of modifying one link in a food chain may not be known for long periods of time and often cannot be forecast at the time of application. Thus, accurate assessment is extremely difficult under the best of circumstances and is often impossible under existing regulatory procedures and standards which were created to deal with only the non-environmental problems of fuel and energy.

Traditionally our waterways and airsheds have been treated as free goods, and because the marginal value of a free good to any one additional user is close to zero, there has been little or no incentive for the establishment of a property system which would function to force users to internalize the social costs of such uses as residual disposal. But this situation is changing:

> What is appearing now, however, is a vast asymmetry in the adequacy of our property institutions (which, of course, underlie all private exchange) to handle resource allocation problems. On the one hand, in the production of basic natural resources commodities, property institutions with some controls and adjustments, in general, serve quite well to lead production into highest productivity channels now and in the future. On the other hand, the flow of residuals back to the environment is heavily weighted to media where private property institutions can function imperfectly, if at all. Once these media become overloaded on a signifi-

---

Green, The Adversary Process in Technology Assessment, *Hearings Before the Subcomm. on Science and Astronautics*, 91st Cong., 1st Sess., 353 (1969). The reasons are well-known but bear repeating:

> In some cases the risks are totally unappreciated until a later date; in other cases, there may be an appreciation of possible risks which have not yet been demonstrated to be real. The proponents of the technology may always be counted upon to minimize or suppress the risks. Although the proponents are usually well organized and well-financed in their articulation of the benefits, those who seek to advance the negative factors tend to be rather disorganized and to lack resources. Not infrequently—particularly in the case of government-sponsored technologies—it is difficult for the opponents to obtain relevant and adequate information about risks, and even more difficult, because the experts who are privy to the relevant information are usually pro-technology, to obtain experts to assist them in formulation of their contentions. The natural consequence is that the opposition is forced to state its case using information which is incomplete or not wholly accurate, and, therefore, is easily discredited. Frequently the establishment seeks to discredit the opposition *ad hominem*, and this exacerbates the situation forcing the opposition to take an extreme position which makes it even easier for the proponents to discredit their contentions on their merits.

> cant scale, they are free goods no more but, rather, *natural resources* of ever increasing value as economic development proceeds.[6]

In 1965, 20 per cent of all primary energy was consumed by electric utilities. Plants which burn high sulfur coal or oil are a substantial burden on air resources because they discharge huge amounts of pollutants. Further, these plants, especially the nuclear ones, are becoming even larger, increasing their potential adverse impact on the landscape. When they are located in or near the more affluent suburbs or scenic undeveloped areas they are often vigorously opposed by nearby residents as well as conservation groups.[7] The problem is that currently there is no single agency at any level of government which can accomodate the clash between the economic and the environmental interests. The existing regulation is sadly fragmented between the various levels of government. Nevertheless, regulatory agencies are still better equipped to handle this dispute than are private law suits because eventually the agencies can balance legitimate competing interests according to a consistent set of policies often established on a national level.[8] The solution then, is to create new regulatory agencies or to revise the existing ones effectively to confront the problem.

---

6. A. KNEESE, R. AYERS, & R. D'ARGE, ECONOMICS AND THE ENVIRONMENT: A MATERIALS BALANCE APPROACH 13-14 (1970).

7. However, they are often actively courted by small, semi-economically depressed areas or small towns near metropolitan centers. But even in remote areas such as southern Nevada, utilities are encountering stringent regulation. An example is the Mohave Generating Station located in the Nevada Desert which was designed to discharge around one ton of fly ash per hour, representing a soot removal efficiency of 97%. However, this does not conform with county ambient air standards promulgated under the 1967 Clean Air Act which permit only one-half ton per hour requiring a 98.6% efficiency rate. *See* Hill, *Struggle in the Desert: Power Versus Environment*, N.Y. Times, July 7, 1970, at 22, col. 1.

8. In this case the agencies follow a national fuels policy. *Cf.* Jaffe, *Book Review*, 84 HARV. L. REV. 1562, 1565 (1971). However, we do not agree with many of the proponents of one-stop licensing of power plants that the purpose of the agency should be to shield utilities from public scrutiny. AEC Commissioner James E. Ramey, an early advocate of a federal licensing procedure for all power plants, balks at the implications of Scenic Hudson Preservation Conf. v. FPC, 354 F.2d 608 (1965), *cert. denied*, 384 U.S. 941 (1966), which is the most explicit judicial formulation of a theory of environmental protection through licensing. "It seems clear that an overreaction by licensing agencies to the Scenic Hudson doctrine in an effort to make their decisions appeal-proof could introduce considerable unnecessary delay into the licensing of affected agencies." Ramey & Murray, *Delays and Bottlenecks in the Licensing Process Affecting Utilities: The Role of Improved Procedures and Advanced Planning*, 1970 DUKE L.J. 25, 28. Our concern is not with delay *per se* but with a series of prolonged licensing challenges which do not contribute to the development of a long-range accommodation between power and environmental policies.

We examine three basic topics in this article: (1) the existing process of public utility site selection; (2) the major potential environmental side-effects which flow from the choice of site and which are not generally taken into account by utilities in their cost calculations; and (3) existing and proposed methods of site selection regulation. Our objective is to determine how the utility's basic decision-making process must be changed to make it more responsive to environmental impacts, and which method of public regulation can best accomplish these changes. Thus, we will not be concerned with problems such as radiological hazards which exist regardless of the site chosen. Our basic premise is that the existing process of utility decision-making and, to a lesser extent, public regulation has been concerned with the short-run or first order consequences of the impact of a plant on the environment where ideally an attempt should be made to anticipate its long-run or second order consequences.

I. UTILITY DECISION-MAKING

The utility's decision can be classified into three basic choices:

1. *Choice of Energy Form*

The choice of fuel for a proposed generating station is among conventional nuclear, coal, oil and natural gas. Energy demand projections, and resource supply estimates dictate increased reliance on nuclear fuels in the future,[9] but the basic consideration is cost. For example, in the mid 1960's utilities began to order nuclear plants as a result of large expenditures (by the AEC and a few major firms such as General Electric) which promised to make nuclear reactors competitive with coal burning plants.[10]

2. *Choice of Site*

The decision about the location of a power plant is dictated by proximity to load centers, land requirements, fuel supply and transportation access.[11] Another major factor is the proximity of a direct water source.

---

9. By the year 2000 it has been predicted that the estimated fossil fuel reserves will be dangerously low. Starr, *supra* note 4, at 42.

10. *See* Arthur D. Little, Inc., Report to U.S. Atomic Energy Commission, U.S. Department of Justice, Competition In the Nuclear Power Supply Industry, Contract No. AT (30-1)-3853, at 112 (1968).

11. For a comprehensive survey of historic utility site planning criteria see The Energy Policy Staff, Office of Science and Technology, Considerations Affecting Steam Plant Site Selection 7-16 (1968). A good discussion of the problems utilities face in adapting existing patterns of decision-making to take into account environmental side-effects is

This is crucial because water is the cheapest and easiest way to cool the condensors. However, little attention has been paid to possible environmental ramifications. The utilities generally viewed any such problems as a matter of effective public relations to be solved by "educating the public" about the benefits of nuclear power.[12] Thus, it should be obvious that the choice of site has immensely important ecological consequences and may foreclose other uses of the water and surrounding land area and should not be left to private initiative.[13]

3. *Choice of Design*

At this level the utility decides questions such as whether transmission lines should run underground or overhead, whether cooling waters should be discharged directly into receiving waters or through cooling towers.[14] As we have indicated the most important environmental decision may be site selection but substantial means of avoiding adverse environmental impacts are possible in the design of the plant. For example, the depth placement of a cooling water intake and the intake velocity of the cooling water can mean the difference between protecting or endangering microscopic organisms around the plant.[15]

II. ENVIRONMENTAL SIDE EFFECTS OF SITE SELECTION AND METHODS OF MINIMIZATION

A. THERMAL DISCHARGE

The principal source of thermal discharge is the water used to cool and condense the steam which drives the turbines. If "once through" cool-

---

CALIFORNIA INSTITUTE OF TECHNOLOGY, ENVIRONMENTAL QUALITY LABORATORY, PEOPLE, POWER AND POLLUTION: ENVIRONMENTAL AND PUBLIC INTEREST ASPECTS OF ELECTRIC POWER PLANT SITING 19-21 (1971) [hereinafter cited as PEOPLE, POWER AND POLLUTION].

12. See EDISON ELECTRIC INSTITUTE COMMITTEE ON ENVIRONMENT, MAJOR ELECTRIC FACILITIES AND THE ENVIRONMENT, PLANT SITING TASK FORCE 12 (1970).

13. For example, the Baltimore Gas and Electric Company chose to construct a plant at a point on Chesapeake Bay where certain fish pass during migration. Under then existing Maryland law the utility was able to start construction before requesting a water use permit which would have been the first opportunity for a public review of the site selection.

14. *See* Intergovernmental Coordination of Power Development and Enviroumental Protection Act, *Hearings on S. 2752 Before the Senate Subcomm. on Intergovernmental Relations of the Comm. of Government Operations*, 91st Cong., 2d Sess., 95-395 (1970) [hereinafter cited as *Hearings on Intergovernmental*] for a comprehensive collection of material exploring the decisions involved in the planning and regulation of the plant at Calvert Cliffs, Maryland.

15. *See* Natural Resources Institute, University of Maryland, Comments On Proposal by Baltimore Gas and Electric Company for Calvert Cliffs Nuclear Plant, reprinted in *Hearings on Intergovernmental, supra* note 14, at 355-57.

ing is used, this cooling water is discharged directly into the receiving water.[16] Fossil fuel plants operate at a maximum of 42 per cent efficiency and nuclear plants at about 33-34 per cent efficiency although experts predict that this differential will be eliminated in the next 20 years. The present significance of the differential is that to maintain the same energy output as a coal plant, a nuclear plant may have to discharge up to 50 per cent more water.[17]

Thermal discharges can cause two basic types of environmental damage. Fish may be eliminated from a body of water either by raising the temperature to the species' lethal limit or by raising it to the lethal limit of a key element in the fishes' food chain. Existing pollution can be aggravated because the addition of heat to the water reduces the natural waste assimilative capacity of the water—the dissolved oxygen levels of water may decrease with a rise in temperature while the biochemical oxygen demand increases, thus causing bacterial action to accelerate unless the water is already nutrient deficient. This is especially critical during the summer months when water temperatures are highest and the natural oxygen supply is decreased because of low flows and high natural temperatures. All species have some tolerance to environmental change and thus may adjust over time to a gradual rise in temperature, but the range of tolerance is limited. The metabolism rate of fish, and as a result the fish's demand for oxygen, doubles with each 10° rise. At temperatures below the ultimate incipient lethal level the fish continue to absorb the necessary oxygen but can no longer do

16. It has been alleged that 50% of the nation's water will be effected by the year 2000 if "once through" cooling continues. *Hearings on H.R. 4148 and Related Bills Before the House Comm. on Public Works*, 91st Cong., 1st Sess., 387 (1969) (Statement of Hon. Howard W. Robinson, N.Y.) [hereinafter cited as *Hearings on H.R. 4148*].

17. The magnitude of reject heat is a function of (1) thermal capacity (2) net heat rate and (3) efficiency. Efficiency is the measure of a plant's capacity to convert British thermal units into electricity. Reject heat is calculated by first multiplying the net heat rate times efficiency. This figure gives the amount of energy consumed in producing a kilowatt hour and when the energy consumed is subtracted from the net heat rate, the difference is the wasted heat. The total hourly reject heat rate is obtained by multiplying the reject heat rate by the number of kilowatts of electricity the plant produces in an hour. In addition, the stack losses for coal plants must be calculated. Engineers calculated that one reactor has the capacity of two average coal plants and thus "it is reasonable to double coal plant figures to arrive at a fair comparison. When this is done, the coal station will reject 4 to 6 million BTU's to water as opposed to 8 billion for a reactor. This is the basis for the often quoted 50% differential which applies only to water and does not take into account heat lost up the stack which can constitute a significant heat island having possible micrometeorological consequences." Amato, Heat Discharges from Nuclear Reactors, PROCEEDINGS OF THE CONFERENCE ON INTERNATIONAL AND INTERSTATE REGULATION OF WATER POLLUTION 189, 191 (1970) (Columbia University School of Law).

so when the lethal level is reached. However, the mere fact that this level is not reached is not relevant unless one also knows the rate of acclimation time to adjust to the rise in temperature. If the temperature rises too rapidly, thermal shock may result. This shock may cause fish such as the salmon to lay its eggs prematurely or not spawn at all so that a potential crop of fish will be lost.[18]

There are several possible alternatives to direct heat discharge although each has either financial or environmental costs.[19] The premier method is the use of cooling towers or ponds. Another method is to discharge the heated water into the cooler lower strata of the receiving waters, especially lakes and reservoirs, so that dense currents will promote mixing. Alternatively, dams and barriers can be constructed to separate the heated water from the normal water course. Estuaries and coastal areas will be increasingly favored in the future because of increased efficiency of the cold sea waters to absorb waste heat.[20] As part of a regional interchange program, power plants could be operated on

18. In 1968 the Senate Subcommittee on Air and Water Pollution of the Committee on Public Works held a series of hearings on thermal pollution and a number of technical papers are reprinted in the hearings. *See*, Mihursky & Kennedy, Water Temperature Criteria to Protect Aquatic Life (Natural Resources Institute, University of Maryland) reprinted in Thermal Pollution — 1968, *Hearings Before the Senate Subcomm. on Air and Water Pollution, Comm. on Public Works*, 90th Cong., 1st Sess., 117 (1968) [hereinafter referred to as *1968 Thermal Pollution Hearings*].

19. *See* Staff of the Bureau of Power Federal Power Commission, Problems in Disposal of Waste Heat from Steam-Electric Plants (1969) for a more detailed discussion of the alternatives. The hot water may either be sprayed into the air or recycled. Two major problems with cooling towers have been noted:

1. "The closer the temperature of the cooled tower approaches the wet bulb temperature the larger the tower must be with consequent increases in tower costs." *Id.* at 7.

2. "Because of the large surface area required for heat transfer and the large volumes of air that must be circulated, dry cooling towers are substantially more expensive than evaporative cooling towers. Where used, it would not be possible to obtain as high efficiency as steam-electric plants served by evaporative cooling processes. The effect of discharging large amounts of heated air into the atmosphere is not known." *Id.* at 14. For a comparison of the costs of the various types of cooling towers *see* Woodson, *Cooling Towers*, SCIENTIFIC AMERICAN, May 1971, 70, 77.

20. The National Estuarine Pollution Study projects that 30% of all power plants will be located in coastal zones and recommends that consideration be given to the use of off-shore islands or the construction of artificial ones. Report of the Secretary of Interior to the United States Congress Pursuant to P.L. 89-753, The National Estuarine Pollution Study 335-36 (1970).

Florida has proposed thermal pollution guidelines which would force the location of the state's new plants along the Atlantic coast because that is the only location with "waters deep enough, with enough tidal action to handle large volumes of hot water discharge and still maintain temperatures with the guidelines . . . ." N.Y. Times, Nov. 28, 1971, at 20, col. 3.

a seasonal basis so that the discharge did not occur during the time its impact on the environment is harmful. Indeed, there may be beneficial uses for heated water (thermal enrichment) such as the irrigation and the cultivation of oysters, crabs and mussels, especially in northern latitudes where species are not yet living at the upper limits of their tolerance levels.[21] The use of heated water for space heating and irrigation is also possible but there are many problems with its use for these purposes on a large scale.

B. Air Pollution

Coal burning steam electric generating plants contribute about 50 per cent of the total amount of sulfur dioxide—one of the most damaging pollutants to human health—discharged into the atmosphere each year.[22] The Senate Committee on Public Works estimates that: "Even assuming maximum technological development and application of sulfur control devices and reasonable fuel substitution practices for fossil-fuel steam plants and the expected arrival of the breeder reactor, the best that will occur by the year 2000 is that SO_2 (sulfur dioxide) produced by power plants will be about a factor of three greater than that of 1970."[23] Because the prospects for efficient stack removal processes are limited, the best long range solution lies in the substitution of low for high sulfur fuels. Natural gas is the most desirable available low sulfur substitute but its scarcity makes the competition for it intense.[24] More gas may become available through increased exploration and importation[25] but the best long-run method of increasing reserves is the gasification of coal.[26] This has the advantage of transforming a reasonably plentiful, "dirty" resource into an environmentally desirable one. Research is also underway to desulfurize coal at the mine, but full-scale gasification plants are not scheduled to become operational until the end of the 1970's. Until recently, the coal and

21. *See* Mihursky, *On Possible Constructive Uses of Thermal Additions to Estuaries*, 17 Bioscience 698 reprinted in *1968 Thermal Pollution Hearings*, *supra* note 18, at 131. Testifying in favor of a proposed nuclear plant in Wicasset, Maine, the Chairman of the Department of Biology at Woods Hole Oceanographic Institute predicted that the discharge of heated water would produce beneficial effects—for example, raising temperatures to permit oysters to spawn — because "The great majority of organisms living in the estuary . . . are living at . . . the northern limit of their distribution." *Id.* at 267.

22. 1st. Ann. Rpt., Council on Environmental Quality 68 (1970).

23. Staff of the Senate Comm. on Public Works, Report on Some Environmental Implications of National Fuels Policies, 91st Cong., 1st Sess., 10 (1970).

24. Reserve to production ratios have been falling since 1960. *See id.* at 13.

25. *See id.* at 14-16.

26. *Id.* at 16-17.

utility industries have only committed a minute percentage of their resources to research on developing methods of pollution abatement.[27]

The utilities' response to SO_2 regulations in recent years has been to discharge the same quantities of pollutants into less polluted portions of the atmosphere[28]—either in the higher elevations reached by tall smokestacks or in rural areas which previously enjoyed clean air.[29] Tall smokestacks have the drawback of possible conflicts with aviation and the possibility that emission standards may eventually replace ambient air quality standards.[30] The utilities which have not fled from urban

27. Large known reserves of low sulfur coal exist, but utilities face several major problems in shifting to this source of fuel: (1) recovery costs have been estimated to be 50% greater than medium and high sulfur coals, (2) transportation costs will be higher because many reserves are located in western America away from most major air pollution centers and not presently competitive with high sulfur coal; low sulfur reserves in the East are largely owned by steel companies for their own use, (3) existing boilers are made to take bituminous coal but many low sulfur reserves are sub-bituminous and thus expensive boiler alterations will be required. *See* Wall Street J., April 6, 1971, at 28, col. 2. But, utility reluctance to switch to low sulfur fuels for these reasons must be somewhat discounted. Technological improvements such as the production of synthetic gas from coal are possible alternatives. J. ESPOSITO, VANISHING AIR 105 (1970).

Further, the Federal Power Commission estimated that in 1968 only 0.23% of industry operating revenues were going into research. ENERGY POLICY STAFF, OFFICE OF SCIENCE AND TECHNOLOGY REPORT ON ELECTRIC POWER AND THE ENVIRONMENT 6 (August 1970) [hereinafter cited as ELECTRIC POWER AND THE ENVIRONMENT]. On August 4, 1971, the federal government and the coal industry agreed to a $296 million gasification project. The final cost-sharing formula has not been set but initially the federal government will contribute $20 million and the coal industry $10 million to construct a demonstration plant. N.Y. Times, Aug. 4, 1971, at 13, col. 1. The FMC Corporation committed itself to a $250-300 million coal gasification project with the first production estimated in 1976. Wall Street J. Sept. 1, 1971, at 6, col. 2.

28. Older plants are more expensive to back fit so there is an incentive to phase out their use for "base loads" in urban areas and to use them only to meet occasional peak demands. ELECTRIC POWER AND THE ENVIRONMENT, *supra* note 27, at 12-13.

29. *See* Rogers, *Tacoma's Tall Stack*, THE NATION, May 11, 1970, at 553.

30. The current federal strategy to control air pollution from stationary sources is a combination of national ambient air quality and emissions standards. Clean Air Act of 1970, 42 U.S.C. 1857(c)-4 (Supp. 1971). The 1970 legislation reverses the decision Congress made in 1967 to rely on regional ambient air quality standards rather than either national ambient or emissions standards as proposed by President Johnson. The 1967 act was immediately criticized on the grounds that monitoring standards were not sophisticated enough to establish ambient air quality standards. *See* O'Fallon, *Deficiencies in the Air Quality Act of 1967*, 33 LAW & CONTEMP. PROB. 275 (1968). Theoretically, the states have primary responsibility for setting and enforcing standards but the role of the federal government is considerably more direct and defined. Primary standards are based on criteria which are "requisite to protect the public health," after allowing "an adequate margin of safety", 42 U.S.C. 1857(c)-(4)(b)(1) (Supp. 1971). Secondary standards are broader and are based on the criteria which the EPA determines are necessary to protect the public welfare from the adverse impacts of the pollutant. Within nine months after the primary standards have been promulgated the states must present a plan for the enforcement of primary and secondary standards. The plan must obtain the primary standards

air problems in an upward direction have moved into the less populated regions of the country. This latter choice is a classical socio-environmental trade-off dilemma, to wit: should a few Navajos endure air of ordinary Los Angeles quality or should the Los Angeles area contain all the power plants it needs and approach dangerous levels of air pollution?

C. Landscape Blight

The location of plants away from load centers increases the demand for high voltage transmission corridors. Transmission lines can be installed underground or under water, but the cost of this is several times that of overhead installation.[31] Land values in large cities tend to neutralize this differential and make underground lines practical, thus extra high voltage lines running into city centers are generally subterranean. Formal cost-benefit analysis has not yet derived a satis-

within three years and the secondary standards within a reasonable period of time. The federal government can substitute its own plan if the state plan does not meet the statutory requirements; these include adequate enforcement personnel and the requirement that stationary source owners install monitoring devices. 42 U.S.C. 1857(c)-5 (Supp. 1971).

All new stationary sources must meet federally approved performance standards which include emission standards that reflect the "degree of emission limitation achievable through the application of the best system of emission reduction" available, taking into account the costs of achieving the reduction. 42 U.S.C. 1857(c)-6 (Supp. 1971). The 1970 legislation is based on the premise that Congress should establish standards on the basis of health protection without regard to the technological feasibility of achieving them. *See* Greco, *The Clean Air Amendments of 1970: Better Automotive Ideas From Congress*, 1 Environ. Affairs 384, 392 (1971). This section reflects the only concession to the constraints of technology. A state plan must also include a procedure for pre-construction review of all new sources to which federal performance standards will apply. If the EPA decides the ambient air quality standards are not applicable to a particular discharge which may cause "an increase in mortality and an increase in serious irreversible, or incapacitating reversible illness" national emission standards may be established. 42 U.S.C. 1857(c)-7 (Supp. 1971). The EPA has established final national primary ambient air quality standards for SO_2. *Current Developments*, 2 Environ. Rep. 3 (1971). But, the concept of national standards has been attacked by the FPC on the grounds that power plants may have to be shut down. The EPA has announced that it may follow the policy of requiring the states to pass standards that cannot be met and allow them a longer period of time to comply. *Id.* at 307.

31. The use of overhead lines is advantageous because air provides the insulation for the conductors and dissipates heat whereas underground lines must be covered with heavy insulating materials. The industry consistently claims that underground installation costs about ten to fifteen times as much as overhead construction in suburban areas. The Electric Utility Industry and the Environment 17. In a contested proceeding on an application to construct overhead Extra High Voltage (EHV) lines across the Connecticut River, the Vermont Public Service Board found that submerged installation would cost five times as much as the overhead design. *Re* Vermont Electric Power Co., 81 P.U.R. 3d 510 (Vt. Pub. Svc. Bd. 1969). *See generally* National Power Survey, Distribution Technical Advisory Committee, Report of Federal Power Commission 91-92 (1969).

factory manner of quantifying intangible values such as scenic beauty, but methods exist to determine the adverse impact of different routes. Scales have been developed to rank such categories as scenery from high to low, and although categories cannot be compared among themselves, the method does improve corridor planning by "adding . . . considerations, revealing their locational characteristics, permitting comparison, disclosing aggregates of social values and costs."[32] In addition to improving the process of identifying alternative corridors, policies should be developed to encourage the multiple use of rights of way thus decreasing the amount of land needed for transmission lines.[33]

III. EXISTING FEDERAL REGULATORY STRUCTURE

In the past, the agencies regulating the production of fuel and energy have been more concerned with conservation of the supply sources than with protection of the environment. From a conservation standpoint, the problem is that the fugitive character of a resource like gas makes it difficult for the market to impose a property system to control its use. Since each producer has equal access to the supply, but is unable to exclude other users, there is no incentive to balance present against future needs; in fact, there is a strong incentive to extract all you can get now regardless of present requirements.[34] The danger exists that the supply will be exhausted in a short period thus inflating prices and leaving future demands unsatisfied. Conversely, the production of coal has never been regulated to control supply because coal has not been classified as a scarce resource, although it is now clear that it is becoming one.[35] Similarly, the production of hydroelectric power has only been partially regulated because flowing water is a replenishing resource and there is no need to regulate its use except to protect the public interest when utilities are given a monopoly over choice sites.[36] Atomic energy on the other hand has always been a special problem because of the national security requirements (private industry was not allowed to use it until 1954), the potential for widespread harm from radiation, and the limited knowledge about its feasibility for non-military applications.

32. I. McHarg, Design With Nature 34 (1969).

33. The technical problems are discussed in Electric Power and the Environment, *supra* note 27, at 22-23.

34. *See* J. Hirscheifer, J. De Haven & J. Milliman, Water Supply: Economics, Technology and Policy 59-66 (1960).

35. If coal were relied upon as the main source of the world's energy, the supply would be exhausted in 100 to 200 years. Committee on Resources and Man, National Academy of Sciences—National Research Council, Resources and Man 205 (1969).

36. *See* First Iowa Hydro-Electric Coop. v. F.P.C., 328 U.S. 152 (1946).

As a result the government has maintained extensive control and regulation of its use.[37]

The varying reasons for fuels and energy regulation are reflected in the existing allocation of jurisdiction and authority between the federal government and the states. The Federal Power Commission licenses hydroelectric plants and transmission lines on all navigable rivers and on non-navigable rivers in cases where the energy will be transmitted to another state. The Atomic Energy Commission licenses the construction and design of nuclear reactors and all other parts of the plant and its operations which involve contact with radioactive matter.[38] However, until the recent decision in *Calvert Cliffs v. AEC*,[38a] it did not license all aspects of the construction and operation of the plant; cooling water discharge and the construction of transmission lines were not subject to AEC jurisdiction. If the plant necessitates the construction of structures in navigable waters such as intake and outfall structures, a permit must be obtained from the United States Corps of Engineers.[39] The applicant must also obtain a state certificate under Section 21(b) of the Water Quality Improvement Act of 1970 that the discharge will be in conformity with state water quality standards.

A. The Federal Power Commission

1. *Statutory Criterion under Part 1 of the Federal Power Act*

The FPC has a broad, comprehensive mandate to license non-federal hydroelectric projects.[40] Section 10(a) of the Federal Power Act requires that all projects that are licensed:

> shall be such as in the judgment of the Commission will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate and foreign commerce, for the improvement and utilization of water-power development, and for other beneficial uses, including recreational purposes . . . .[41]

The licensing procedure is characterized by two features: (1) the

37. *See* Dunlavey, *Government Regulation of Atomic Energy*, 105 U. PA. L. REV. 295, 296-300 (1957).

38. 68 Stat. 936, *as amended* 42 U.S.C. 2131 (1964).

38a. 449 F.2d 1109 (D.C. Cir. 1971) discussed at page 534 *infra*.

39. Rivers and Harbors Act, 33 U.S.C. 403 (1964).

In 1967, seven out of 12 large scale fossil fuel plants required a permit from the Corps. 115 CONG. REC. S12111 (1969) (remarks of Senator Muskie).

40. 16 U.S.C. 791-823 (1960).

41. 16 U.S.C. 803 (1960).

decision-makers have discretion to order the priority of 10(a) goals, thus resolving irreconcilable conflicts that would be presented by equal consideration of all standards; and (2) the Commission's authority to implement optimum resource development is limited by the applicant's willingness and capability to initiate and carry through a project subject to FPC jurisdiction. The Commission has attempted to balance its role in promoting development to insure an adequate supply of energy and its planning mandate by issuing licenses subject to environmental consideration rather than denying licenses on environmental grounds, except in rare cases. This section will examine the circumstances under which the Commission has (1) denied applications for environmentally-related reasons and (2) issued licenses with conditions dealing with the environmental effects of the project.

2. *Denial of Licenses*

The most widely cited case, especially by the FPC, for the proposition that the FPC can deny a license application for environmental reasons is *Namekagon Hydro Company*.[42] The Namekagon Hydro Company sought an application to construct a small 1500 kilowatt (kw) hydroelectric project on the Namekagon River in Wisconsin. The State of Wisconsin and the Wisconsin Division of the Izaak Walton League intervened in the FPC proceeding and opposed issuance of the license. The major issue in the proceeding was whether the proposed project met the Section 10(a) standard as it was conceded that the project would provide "the most economical source of power."[43] However, the Commission noted that construction of the project would impair use of the Namekagon River for recreation, and that the river was located in one of the principal recreation areas of the Nation. Accordingly, the license was denied. The Commission did not try to put a monetary value on the non-power factors on the ground that it would be futile to do so "if the purpose is to show all that will be affected if such recreational resources are impaired or destroyed."[44] The decision is especially significant because the Commission did not limit its opinion to the particular application before it, but instead stated that "[r]ecreational values are given consideration in every license application before the Commission."[45]

On appeal, the Commission's decision was upheld.[46] The Seventh

42. *In re* Namekagon Hydro Co., 12 F.P.C. 203 (1953).
43. *Id.* at 205.
44. *Id.*
45. *Id.* at 207.
46. Namekagon Hydro Co. v. FPC, 216 F.2d 509 (7th Cir. 1954).

Circuit went even further than the Commission in stressing the unique aspects of the river, especially the safe canoeing available for children and inexperienced adults, in language seldom seen in the Federal Reports:

> But perhaps the uniqueness of the river is more apparent to those who take a float trip. Many of such persons are from urban centers and to see wild life in a natural setting is a thrill indeed. Such a float trip is exciting as well as peaceful. Passing by heavily wooded banks on either side, with no noise or sound to be heard from highways or railroads, the canoeist has the illusion of being in a forest primeval far from civilization. Each bend of the river is watched with anticipation for a deer may be seen on the bank, or, occasionally, a black bear scurrying for the timber. There are very few, if any comparable stretches of river left in Wisconsin. A canoe trip on the Namekagon often calls for a repeat performance . . . .[47]

The court held that the Commission had the authority under Section 10(a) to deny a license which would threaten "unique recreational resources."

Namekagon could be read narrowly because it was a small-scale project,[48] but such a narrow interpretation is not borne out by *PUD No. 1 of Skamania County, Washington*, Project No. 2199,[49] where an $11 million project of "moderate economic efficiency"[50] was rejected by the Commission. There was evidence that the project, located on parts of the Columbia River System, would adversely affect a fish laboratory and two United States Fish and Wildlife hatcheries costing several million dollars. Additional evidence raised questions about the possible effects of project construction on fish propagation and fish disease, but none of it appeared to be very specific. In turning down the project, the Commission stated that although the evidence on the danger to the fish "is not susceptible of demonstration with mathematical precision . . . it clearly reflects substantial hazards."[51] The Commission did not attribute its denial of a license to any one factor, although it conceded that despite the moderate economic efficiency of the applicant's proposed project, "if that were the only issue we might well grant a conditional license."[52] However, the dissenting

47. *Id.* at 512.

48. Note, *Federal Power Commission Control over River Basin Development*, 51 VA. L. REV. 663, 676 (1965).

49. 32 F.P.C. 444 (1964).

50. *Id.* at 451.

51. *Id.* at 450.

52. *Id.*

opinion indicated that the majority's decision was based on its concern for the fish:

> The majority strikes a stern and rigid pose as to the burden of proof which applicant must bear, and which, it is asserted, was not met. But the merest expression of nervousness by the fishery interests and we go all to pieces.[53]

The separate opinion of Commissioner Ross, who voted with the majority, suggests that the fish indeed were the basis for the Commission's decision. Citing the "epic tragedies which befell the passenger pidgeon, the buffalo and the whooping crane"[54] and the FPC's role "as a trustee and guardian of the nation's resources to protect the continuing interest of the entire human species in our precious natural resources,"[55] Commissioner Ross articulated what obviously bothered the majority —that "when the hatcheries themselves are threatened, it becomes incumbent to proceed cautiously. . . ."[56] The adverse effects on the hatcheries were unsettling because in previous cases the pro-power applicants had always argued that the fish hatcheries were adequate substitutes for fish runs destroyed by the dams.[57]

3. *License Conditions*

The Commission often resolves the environment-power dilemma by granting a conditional license. Such limited approval has been upheld by the courts as being consistent with the broad authority of the Commission:[58] Section 10 provides, *inter alia*, that the licensee "shall

---

53. *Id.* at 455 (dissent of Commissioner Black).

54. *Id.* at 451.

55. *Id.* at 450.

56. *Id.* at 451.

57. An ironic sidelight to the *Skamania* case is the fate of the "unique" recreational opportunity argument presented in *Namekagon*. In contrast to the latter situation, the construction of the *Skamania* project would actually have resulted in a unique, so to speak, recreational facility for the Pacific Northwest, that is, flat water fishing and water recreation. In fact, the majority stated, "any loss in stream fishing as a result of the project would be more than offset by the addition of the boating and lake fishing not now available." *Id.* at 448.

58. In United States v. Appalachian Power Co., 311 U.S. 377, 426-27 (1940), the Court stated:

> [I]t cannot properly be said that the constitutional power of the United States over its waters is limited to control for navigation. By navigation respondent means no more than operation of boats and improvement of the waterway itself. In truth the authority of the United States is the regulation of commerce on its waters. Navigability, in the sense just stated, is but a part of this whole. . . . [T]he respondent cannot, by seeking to use a navigable waterway for power generation alone, avoid the authority of the Government over the stream. That authority is as broad as the needs of commerce. . . . The licensing conditions to which objection is made have an obvious relationship to the exercise of the commerce power. Even if there were no such relationship the plenary power of

conform to such rules and regulations as the Commission may from time to time prescribe for it for the protection of life, health, and property"; that all licenses are to be subject to "such other conditions not inconsistent with the provisions of this Act as the Commission may require"; that the Commission shall approve modifications for project works not in accord with approved plans; and that reimbursement be established by the Commission for headwater benefits and annual charges to the United States.[59]

The Commission has standardized these terms and conditions for various categories of applicants in sets called "L-forms"[60] which, in addition to power, include water resource development, navigation and safety considerations, provisions prescribing water releases "for beneficial public uses, including recreational purposes",[61] the construction and maintenance of fish and wildlife facilities,[62] the free use of project lands and waterways for the maintenance and operation of federal fish and wildlife facilities,[63] the construction, maintenance and operation of recreational facilities and modification of project structures and operations as may be requested by federal and state agencies for recreation,[64] free public access to project waters and land,[65] measures to prevent soil erosion, including revegetation of exposed soil surfaces,[66] disposal of unused timber, brush, refuse and other materials resulting from project operations,[67] and the restoration of streams in case the project is abandoned.[68]

The Commission has taken the terms and conditions relating to recreation, fish and wildlife seriously. It rejected an applicant's arguments that the recreation facilities recommended by the Vermont

---

Congress over navigable waters would empower it to deny the privilege of constructing an obstruction in those waters. It may likewise grant the privilege on terms.

59. 16 U.S.C. 803 (1964).

60. Statement of General Policy Providing Citations to L-Forms, Order No. 348, 37 F.P.C. 1037 (1967). The Commission stated that the forms were not binding regulations, but that the Commission "normally adheres to them . . . in issuing subsequent permits or licenses in similar circumstances."

61. Article 13, Form L-11 (Sept. 1, 1966), 36 F.P.C. 687, 690 (1966).

62. *Id.* Article 16, at 691.

63. *Id.* Article 17.

64. *Id.* Article 18.

65. *Id.* Article 19. *See* Rumford Power Co. v. F.P.C., 355 F.2d 683 (1st Cir. 1966), and memorandum opinion on remand, Rumford Falls Power Co., Project No. 2333, 36 F.P.C. 605 (1966).

66. *Id.* Article 20, at 692.

67. *Id.* Article 22.

68. *Id.* Article 24.

Recreation Department were "impractical and too costly in view of the close proximity of the Lake Champlain area which is highly developed for recreation."[69] And in a case where a newly constructed dam had changed the conditions on a river, the Commission required the licensee to build a fish screen costing approximately $200,000 because the California Department of Fish and Game Commission[70] indicated that "low populations of steelhead make it urgent that construction of the screen not be delayed."[71]

In addition to the standard terms and conditions, the Commission's conditioning authority has been used to accommodate an increasing variety of environmental considerations.[72] In the *Brazos River Authority* case, the Commission granted a private utility permission to use project waters to cool steam turbines.[73] However, article 28 of the license required the licensee to work with the Texas Parks and Wildlife Agency in developing a method for project operations which would prevent an increase in the water temperature above a level which would be detrimental to the fishery and recreational resources.[74] If the licensee and the fish and wildlife agencies could not agree on criteria, the Commission would reconsider the license after a public hearing.[75]

In *Arkansas Power and Light Co.*,[76] the Commission granted a license to a utility that was raising the water temperature above the approved limit, but expressly noted that "interim Commission action may be taken to meet *any* demonstrated adverse effects"[77] such as thermal or chemical pollution of the fish and wildlife. Further, the FPC ordered the licensee to finance a study of the effect of thermal discharge on fish and wildlife before and after installation and to submit "proposals for protecting the waters of Lake Catherine, and downstream waters

69. Green Mountain Power Corp., Project No. 2513, 41 F.P.C. 64, 65 (1969).

70. Pacific Gas & Electric Co., Project No. 77, 44 F.P.C. 198 (1970).

71. *Id.* at 198.

72. In *Susquenhanna Power Co.* and *Philadelphia Electric Power Co.*, Project No. 405; *Philadelphia Electric Co.*, Project No. 2355, 32 F.P.C. 826 (1964), the Commission required the expenditure of funds by the licensee for an archaeological survey, salvage, and for the donation of 500 acres of land adjacent to the project reservoir for a wildlife refuge. The fences, food and plant cover for the refuge were to be provided at the licensee's expense but the management was provided by the state game commission.

73. 34 F.P.C. 1507 (1965). *See also* Duke Power Co., Project No. 2503, 36 F.P.C. 675, 681 (1966).

74. *Id.* at 1510.

75. *Id.*

76. 40 F.P.C. 522, 523 (1968).

77. *Id.* at 523 (emphasis added).

and fish and wildlife resources. . . ."[78] The Commission said that if the licensee failed to cure any adverse effects on the fish or wildlife (either during or after the study), it would order remedial action upon request or on its own motion.[79]

A separate statement summarized the three substantive issues that had been decided in *Arkansas Power*: (1) the FPC can impose requirements with respect to thermal pollution; (2) these requirements can be "more stringent than those specified by the Federal Water Pollution Control Administration or by other federal or state agencies having authority regarding such matters—either as a legal or as a practical matter"; and (3) the FPC stood ready to act, "whenever such action, in its independent judgment, is required in the interest of comprehensive development."[80]

4. *Judicial Expansion of the Commission's Duty to Consider Environmental Impacts*

The extent to which the courts will allow the Commission to exercise its discretion in evaluating the environmental issues presented by an application for a license has not yet been settled. In *Washington Department of Game v. FPC*,[81] the Ninth Circuit held:

> As we see it, it is not within our jurisdiction to prescribe a policy . . . . If the dams will destroy the fish industry of the river, we are powerless to prevent it . . . . *If it is the law (and we are not holding one way or another) that the Commission is held to the use of discretion in its requirements as to the preservation of any use to which a navigable stream is currently being put,* we hold that the Commission has given the subject of the fishing industry due consideration and has not abused its discretion.[82]

However, in *Scenic Hudson*,[83] Consolidated Edison of New York, a utility serving the New York City area, filed an application with the FPC to build a 2,000 MW pumped storage project on the Hudson River. Scenic Hudson Preservation Conference, a local citizens' organization, intervened in the proceedings in order to represent the public's interest in esthetics and conservation, allegedly in jeopardy because

78. *Id.* at 524.
79. *Id.*
80. *Id.* at 525.
81. 207 F.2d 391 (9th Cir. 1953).
82. *Id.* at 398 (emphasis added).
83. Scenic Hudson Preservation Conf. v. FPC, 354 F.2d 608 (2d Cir. 1965), *cert. denied*, 384 U.S. 941 (1966).

of the project. The FPC licensed the project but the conference appealed to the Second Circuit and won a major victory. The court ruled that the Commission could not remain passive as to alternatives to the applicant's pumped storage plant, especially in light of the project's location "in an area of unique beauty and major historical significance." The court found the record incomplete with regard to the alternative ways the utility might procure power, the effects of such alternatives, the esthetic advantages of underground transmission lines vis-à-vis their economic disadvantages (*i.e.*, high cost), and the danger to the fish. The court remanded the proceedings and added:

> The Commission's renewed proceedings must include *as a basic concern* the preservation of natural beauty and of national historic shrines, keeping in mind that, in our affluent society, the cost of a project is *only one of several* factors to be considered.[84]

In its decision, the court reminded the Commission that Section 10(a) "undoubtedly encompasses the conservation of natural resources, the maintenance of natural beauty, and the preservation of historic sites," and that the Act seeks to protect non-economic as well as economic interests.[85]

In *Udall v. FPC*[85a] the United States Supreme Court went even further and indicated its reluctance to accept a record unless the Commission gave extensive consideration to the benefits of *not* constructing a proposed project. Mr. Justice Douglas, writing for the majority, remanded because the Commission did not sufficiently explore the issue of federal development, and (in dictum) because the Commission did not consider the question of "whether deferral of construction would be more in the public interest than immediate construction and whether preservation of the reaches of the river affected would be more desirable and in the public interest than the proposed development."[86] Thus, environmental issues must be considered not only in relation to alternative projects but also in relation to the benefits of no project. The Court stated: "We cannot assume that the Act commands the immediate construction of as many projects as possible."[87]

There is some question as to the source of the Commission's authority to deny a license application on the ground that a deferral of

84. *Id.* at 624.
85. 354 F.2d at 616.
85a. 387 U.S. 428 (1967).
86. *Id.* at 449.
87. *Id.*

the construction would be more in the public interest than immediate development.[88] In the *Udall* opinion, Mr. Justice Douglas supported his ruling by citing the Wildlife Coordination Act of 1958. This act requires the Fish and Wildlife Service of the Department of the Interior to determine whether fish life will be threatened by a federal project and to consult with the agency licensing or undertaking the development to determine if adverse environmental impacts may materialize.[89] Justice Douglas' emphasis on this statute suggests that courts have an important role in harmonizing conflicting legislative policies in situations where the legislature has failed to order priorities.[90] A statute

88. The traditional ground for denial of a license or postponement of consideration of a license application is congressional enactment of specific legislation. In *Arizona Power Authority*, the Commission issued an order halting the licensing process in direct response to special legislation suspending the FPC's authority to issue any license or to accept for filing any applications for licenses or permits within the affected reach of the river for two years. Arizona Power Authority, Project No. 2248; City of Los Angeles and its Department of Water and Power, Project No. 2272, 32 F.P.C. 736 (1964). The proposed project would have backed up waters into the Grand Canyon area and was a highly sensitive political issue from the viewpoint of the conservationists, the irrigation interests, and the California water interests. Since the Arizona Power case, similar bills have been introduced to halt proceedings affecting projects on the Snake and Hudson rivers.

89. Historically the Corps limited its responsibility to protecting the navigable capacity of waters subject to its jurisdiction. In 1958 it was required to consult with the Fish and Wildlife Service of the Department of the Interior, 16 U.S.C. 662 (1970) and in 1967 a coordination procedure was devised by the Departments of the Army and Interior to provide more systematic environmental information to the Corps. 33 C.F.R. § 209.120(d)(11) (1970). In Zabel v. Tabb, 430 F.2d 199 (5th Cir. 1970), it was held that a permit could be denied for ecological reasons and the Corps has revised its regulations to reflect a more expanded mission. Proposed filling and dredging operations will be evaluated in terms of the project's impact on the public interest which includes "navigation, fish and wildlife, conservation, pollution, aesthetics, ecology. . . ." 33 C.F.R. § 209.120 (d)(1) (1970). The portion of a power plant covered by a permit is usually only a small part of the total project. Therefore the Corps permit is not the ideal stage for review of all the environmental impacts of a proposed plant. Its most zealous supporters recognize this by defending it as a means of collaterally attacking an environmentally unsound project. The permit's utility for this purpose is somewhat weakened by the Corp's regulations on public hearings. *See* Castro, *The Use of the Corps of Engineers Permit as a Tool for Defending the Environment*, 11 NAT. RES. J. 1 (1971). Public hearings are not required prior to issuing a permit; but regulations provide that a hearing shall be held "whenever there appears to be sufficient public interest to justify such action. In case of doubt, a public hearing should be held." 33 C.F.R. § 209.120(g)(1) (1970). Notice of a permit application is sent to federal departments such as the Department of the Interior and state and local governments. 33 C.F.R. § 209.120(f) (1970).

90. Expanded theories of judicial review as illustrated by *Udall* may be based on the deeper premise that the "public interest" or "common good" is not something that can be easily determined. Democratic decision-making requires that a decision cannot be considered legitimate unless the decision-maker has fully considered the impact of the choice on alternative claimants for the resource even though they are not formally before him. These ideas are drawn from J. BUCHANAN & G. TULLOCK, THE CALCULUS OF CONSENT (1962) (esp. ch. 8); and Krutilla, *Conservation Reconsidered*, 57 AM. ECON. REV. 777 (1967).

such as the Fish and Wildlife Coordination Act is evidence that the legislature considers the protection of environmental values more important than development in certain instances. Further, while the Court cannot usurp this decision-making process from the Commission (because Congress has delegated such authority to that agency), the Court can further the policy of the legislature by requiring a more complete record than would be necessary under traditional rules of administrative law. Thus to establish a prima facie case, an applicant must now demonstrate that the license will be consistent with congressional policy as expressed in other relevant legislation. The National Environmental Policy Act of 1969 now mandates the kind of record required in *Scenic Hudson* and *Udall;* thus, the courts have the task of formulating standards to separate *pro forma* from in-depth consideration of environmental impacts and alternatives.

B. The Atomic Energy Commission

The Atomic Energy Commission is charged with two potentially conflicting roles—the promotion and the regulation of nuclear power.[91]

91. To explore fully the consequences of this dual mission is beyond the scope of this article, but a recognition of the AEC's potentially conflicting roles is necessary to understand the history of their attitude toward the regulation of the environmental side effects of nuclear plants. The Commission is sensitive to this criticism and has restructured its licensing procedure to achieve a higher degree of separation between the developmental, promotional and regulatory aspects of the Commission's mission. License applications are reviewed by the Commission's regulatory staff, the three member Atomic Safety and Licensing Boards and the Advisory Committee on Reactor Safeguards (ACRS). 10 C.F.R. § 21 *et seq.* (1970). The licensing boards consist of technical and legal personnel drawn from outside the AEC's staff and issue an initial decision on each application after a public hearing. A hearing is not held unless the technical staff recommends the issuance of a license. A decision may be appealed first to the Licensing Appeals Board and then to the Commission. The ACRS is also independent; it "is required by law to conduct an independent safety review of each power reactor license application" and is "a prestigious body representing the various disciplines required for a thorough consideration of nuclear safety matters." *1969 Atomic Energy Hearing, supra* note 1, at 123. The separation of the Commission's promotional and regulatory activities are not as complete as the structure would suggest. The commissioners maintain control over both regulation and research and development. And, the relationship between the Commission and the scientific community is a complex web of shared values, friendships and consultantships. Special criticism has arisen over these apparently close ties so that reliance on outside scientists to review and issue initial license applications does not insure impartiality. *See* Like, *Multi-Media Confrontation—The Environmentalists Strategy for a "No-Win" Agency Proceeding,* 13 Atomic Energy L.J. 1, 2-5 (1971) for a critique of AEC licensing. *See also* Green, *Safety Determinations in Nuclear Power Licensing: A Critical View,* 43 Notre Dame Law. 633 (1968). The AEC has resisted proposals to separate regulation from development completely on the ground that there is "a vital need for a high degree of communication between the regulatory organization and . . . those . . . in research and development . . ." in order to facilitate the exchange of information.

Under the AEC's licensing process the applicant must first obtain a construction permit which gives the Commission the opportunity to review the site and design plans. After construction, the applicant petitions for a final operating license, and the Commission then determines whether the plant has been constructed in accordance with the permit and whether the operation will be consistent with AEC policy and regulations.[92]

The Commission originally took the position that Section 2(e)[93] of the Atomic Energy Commission Act of 1954 confines their jurisdiction to questions concerning the use of nuclear power for common defense and security, and to questions of radiological health and safety with respect to the special hazards associated with the operation of nuclear facilities.[94] Thus, evidence on other environmental hazards, such as thermal pollution, have been excluded from licensing proceedings. However, the Commission has periodically attempted to coordinate its licensing proceedings with other governmental agencies directly charged with related regulation. For example, in 1964 the Commission executed a memorandum of understanding with the Department of Interior whereby the Commission would furnish the Fish and Wildlife Service with copies of license applications so that the Service could comment thereon. But such attempts at coordination have generally failed. One such failure occurred when, in 1965 the Hempstead Land Resources Council filed a petition for intervention alleging that Consolidated Edison's Indian Point reactor would cause, in the Commission's words, "so-called thermal pollution." The Commission dismissed the petition on the grounds that the objection was not based on consideration of radiological safety, and noted that: "We are not called upon to decide the extent to which the contentions of the Council may fall within the areas of responsibility of other Federal, State or local authorities."[95]

1969 Atomic Energy Hearings, supra note 1, at 137 (statement of Commissioner Ramey). This view is supported by Professor Davis. Davis, *Nuclear Facilities Licensing; Another View*, 110 U. PA. L. REV. 371 (1962). The other view is that of Professor David Cavers who argues for the creation of independent reviewing board to review all license applications, not to resolve scientific questions "but to check judgments—judgments on interrelated scientific, technological, and policy questions." Cavers, *Administrative Decision-making in Nuclear Facilities Licensing*, 110 U. PA. L. REV. 330, 359 (1962). Experience has demonstrated the correctness of Professor Cavers' arguments.

92. 42 U.S.C. 2235 (1970). For purposes of the act a construction permit is a license.

93. 42 U.S.C. 2012(e) (1964).

94. *1968 Thermal Pollution Hearings, supra* note 18, pt. 3 at 975.

95. *See In re* Consolidated Edison Co., 3 A.E.C. 62, 63 (1965). *See also In re* Jersey Central Power & Light Company, 2 A.E.C. 446 (1964) (initial decision), *affirmed* 2 A.E.C.

In October, 1967 Commissioner James T. Ramey recommended the establishment of a "broadly based Federal Interdepartmental committee on electric power plant siting to develop a coordinated approach to the planning of ways to handle the problems affecting siting."[96] This resulted in the preparation of two reports by the White House Energy Policy Staff which were released in 1968 and 1970. These reports have formed the basis of federal power plant siting and energy planning policy. However, developments in the courts and in Congress between 1968 and the present have outpaced the efforts of the federal government to deal with the problem through the cumbersome process of interagency coordination or the establishment of a completely new regulatory system.

The AEC's limited jurisdictional position was litigated and affirmed by the First Circuit in *New Hampshire v. AEC*,[97] a case now less important for its holding than for the legislative reforms it generated. An investor-owned electric utility consortium decided to construct a generating plant in Vernon, Vermont on the Connecticut River across from New Hampshire and four miles above the Massachusetts boundary. Initial plans projected discharges which would raise the temperature of the receiving water by 20°. All three states were undertaking a a salmon restoration program in the Connecticut River which would have been impaired by the discharge; other species were similiarly threatened with extinction. At the time construction plans were disclosed, none of the states had their thermal water quality standards approved by the Secretary of the Interior, and, moreover, were considering conflicting standards. For example, because Vermont planned to permit mixing zones, the allowable temperature limits would be calculated downstream from the discharge under its standards. New Hampshire, however, did not plan to allow mixing zones and thus the temperature would have to conform to the standards at the point of discharge.[98] Because no effective interstate regulatory mechanism existed to consider state thermal policies before construction of the

---

Rep. 28 (1965). *Cf. Hearings on H.R. 4148, supra* note 16, at 408 for description of the evolution of Interior-AEC coordination.

As criticism of the Commission's limited concept of their jurisdiction mounted, the AEC continued to adhere rigidly to their construction of section 2(e) but did ask for comment from other federal agencies on other possible environmental hazards of the plant they were licensing.

96. *1969 Atomic Energy Hearing, supra* note 1, at 125.

97. 406 F.2d 170 (1st Cir.), *cert. denied*, 395 U.S. 962 (1969).

98. *1968 Thermal Pollution Hearings, supra* note 18, pt. 1 at 330 (statement of Peter Shapiro, Assistant Attorney General, New Hampshire).

plant, the states placed primary reliance on joint intervention before the AEC to accomplish the necessary regulation. However, Vermont, where the plant was located, proceeded to prepare its thermal standards and to study the costs and benefits of installing cooling towers in the plant. In mid-1967 Vermont Yankee applied to the Vermont Water Resources Board for a license to construct the plant, after some "prodding" by the state.[99] When it became clear that the plant could not meet the thermal standards that Vermont had submitted to the Secretary of the Interior, they agreed to construct two cooling units consisting of 11 towers.[100] At this point Vermont and Massachusetts withdrew from the AEC Proceedings but New Hampshire, which had not yet adopted standards, pressed on with the litigation.

The Atomic Energy Act requires the Commission to consider the "health and safety of the public"[101] in licensing projects and New Hampshire argued that these words be given "their present day plain meaning." This, the court admitted, would confer jurisdiction, but they found that the history of the 1954 Atomic Energy Act indicated that Congress intended to deal only with the special hazards of radioactivity and that the agency's construction had been confirmed by subsequent Congresses. The evidence of Congressional confirmation was that bills to broaden jurisdiction had been introduced but not passed and, more significantly, that the Commission's construction of the Act was consistent with that of the Joint Committee on Atomic Energy. The Joint Committee is required to make "continuing studies of the activities of the Atomic Energy Commission and of problems relating to the development, use and control of Atomic Energy."[102] However, a very intimate relationship has developed between the Committee and the Commission; Joint Committe hearings are as nonadversary as one is likely to find in Washington. The court did not refer to this fact stating only: "[W]e note the very special relationship, crystallized in statutory form between the Commission and the Joint Committee on Atomic Energy—a relationship that is rarely embodied in positive law."[103]

---

99. *Id.* at 317-21 (Statement of James L. Oakes, Attorney General, Vermont).

100. The hearing before the Vermont Water Resources Board is summarized in *id.* at 424-30.

101. 42 U.S.C. 2232(a) (1970). Neither the act nor the commission's regulations define these terms. *See* Green, *supra* note 94, at 635-37.

102. 42 U.S.C. 2252 (1970).

103. 406 F.2d at 174. In Power Reactor Development Corp. v. International Union of Electrical Workers, 367 U.S. 396, 409 (1961), the Court said that there were special reasons to defer to the refusal of the Joint Committee on Atomic Energy to expand the

It is easy to criticize the court for failing, in their own words, to close "a serious gap between the dangers of modern technology and the protections afforded by law. . ."[104] when the statute did not expressly prohibit them from doing so. The case raises important questions about the limits of statutory construction as a means of inducing an agency to undertake new regulatory programs. There is a difference between an agency which is straining to expand its jurisdiction and needs only court approval to undertake a program, and one which is reluctant to regulate. The AEC's position on thermal discharges is an example of the latter and sound principles of public administration suggest that the court consider carefully the consequences of expanding the agency's jurisdiction. There is a high risk that the agency will not alter its basic priorities and that an ineffective regulatory program will be generated by a well meaning court.[105] Further, a court decision may lessen legislative incentive to desigu more optimum regulatory mechanisms.

The Congressional response to the problems posed by *New Hampshire v. AEC* was to amend the Federal Water Pollution Control Act in 1970 to provide:

> Any applicant for a Federal license or permit to conduct activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters of the United States, shall provide the licensing or permitting agency a certification from the State in which the discharge originates or will originate, or, if appropriate, from the interstate water pollution control agency having jurisdiction over the navigable waters at the point where the discharge originates or will originate, that there is reasonable assurance, as determined by the State or interstate agency that such activity will be conducted in a manner which will not violate applicable water quality standards.[106]

If certification is denied, no federal permit or license can issue. The requirement can be waived only if the state or interstate agency fails to act "within a reasonable period of time (which shall not exceed one year)."[107]

Commission's jurisdiction because of the "peculiar responsibility and place" of the committee in the statutory scheme of an untried and new program.

104. 406 F.2d at 173.

105. *See* Caldwell, *Administrative Possibilities for Environment Control* in FUTURE ENVIRONMENTS OF NORTH AMERICA 666-67 (F. Darling & J. Milton eds. 1966), for a discussion of the relationship reordering priorities and the design of new regulatory procedures.

106. 33 U.S.C. 1171(b)(1) (1970).

107. The amendment also contains a mechanism to protect the interests of other

The two significant features of this section are the choice of state rather than federal agencies as the primary enforcement mechanism, and the compliance standards the applicant must meet to obtain state certification. The Department of Interior's initial proposal would have provided that each federal agency could not license a facility until the agency had received a report from the Secretary of Interior on the facility's effect on water quality standards. Thus, the agency, and not the Department, would have had the power to require "such measures as it deems appropriate"[108] to insure compliance. By placing primary responsibility on the states, the amendment rejects the argument that the solution to a constructive administrative policy is simply to add to the list of criteria a federal agency must take into account in the licensing process. This solution recognizes that expanding an agency's jurisdiction, or even broadening the burden it must meet in considering an application does not deal with the more fundamental problem—to re-order the agency's priorities away from the notion that environmental considerations will remain secondary to the principal mission of providing adequate energy supplies to meet rapidly increasing demands.

The requirement that the state agency certify only that the licensee will comply with water quality standards represents a compromise between the views of Senator Muskie and the utility industry on the standards necessary for certification. Senator Muskie would have required the utilities to obtain both a pre-construction and a pre-operation permit. The utilities argued that such a process would unduly delay the construction of needed plants because it added a needless administrative step. As finally passed, the amendment section 21(b) provides that the initial certificate will be valid for all federal agencies from whom a license must be obtained, unless the state certifying authority notifies the federal agency

> . . . that there is no longer reasonable assurance that there will be compliance with applicable water quality standards because of changes . . . in (A) the construction or operation of the facility, (B) the characteristics of the waters into which such discharge is

states which may be affected by the discharge but are not represented in an interstate agency. After the licensing agency has received the application and certification it must notify the Secretary of the Interior. If he decides that the discharge may affect another state, he must notify the other state or states within 30 days. The state(s) then have 60 days to decide if they desire a hearing before the agency, to which they are entitled as a matter of right. At the hearing both the affected state and the secretary will present their recommendations. This section was inserted by the House-Senate Conference and leaves the duty of the licensing agency somewhat unclear.

108. S. 7, Sec. 14(b), 91st Cong., 1st Sess. (1969).

made, or (C) the water quality standards applicable to such waters. This paragraph shall be inapplicable in any case where the applicant for such operating license or permit has failed to provide the certifying State, or if appropriate, the interstate agency of the Administrator, with notice of any proposed changes in the construction or operation of the facility with respect to which a construction license or permit has been granted which changes may result in violation of applicable water quality standards.[109]

Although this compromise lightens the paperwork involved in certification, it puts the burden of stopping the federal licensing process completely upon the states. If a state chooses not to intervene through pre-operational review, the federal agency has no further duty to hesitate in granting the license. Under the original concept, the burden would have been on the utility to obtain the second certification before federal licensing could be had and before the plant could be put into operation. Further, the amendment works to constrain a state from exercising caution in those situations where it must make its certification decision with only limited information about the ecological effects of the utility.

STATE ENFORCEMENT OF THERMAL STANDARDS

Senator Muskie's theory was that, consistent with federal legislation which places the primary responsibility for formulating and enforcing standards on the states, state environmental agencies ought to have the primary responsibility for setting those standards.[110] In placing the primary responsibility for enforcement of thermal water quality standards[111] on the states, Section 21(b) has two major defects. First, it means that the federal government can only bring a judicial action (which is really the culmination of a long series of hearings aimed at securing industry compliance) after a violation occurs;[112] even then, it

109. 33 U.S.C. 1171(b)(3) (1970).

110. 33 U.S.C. 1160 (1970). *See* Hines, *Nor Any Drop to Drink: Public Regulation of Water Quality, Part III: The Federal Effort*, 52 IOWA L. REV. 799 (1967).

111. A water quality standard consists of three basic elements: (1) a description of the desired beneficial use of the water, (2) criteria which are the scientific parameters necessary to support the beneficial use, and (3) an implementation plan. U.S. DEPARTMENT OF INTERIOR, FEDERAL WATER POLLUTION CONTROL ADMINISTRATION GUIDELINES FOR ESTABLISHING WATER QUALITY STANDARDS FOR INTERSTATE WATERS (1967).

112. If the Administration of the EPA believes that pollution from a source in one state is endangering the inhabitants of another state, he may call a conference on his own motion. If the pollution is confined to one state, a conference can only be called at the request of that state's governor. The conference is a public proceeding which attempts to obtain a consensus on proposed standards and abatement schedules. If the

has limited authority to initiate such actions without the consent of the state. Second, state regulatory programs are not equipped to carry the initiative given them under the federal act.

Prior to the passage of the Water Quality Act of 1966 few states had an active thermal pollution control program and there was no clear federal policy to which the states could look for advice.[113] Indeed, even today there is sharp debate over the standards to be applied. The Environmental Protection Agency has avoided the establishment of a firm thermal standards policy. Instead, they have preferred to negotiate agreements with utilities, as they did in the case of Lake Michigan, that cooling towers will be constructed for all future plants.[113a]

The drafting and enforcement of thermal quality standards present several serious problems. It is possible to establish general parameters for such standards, such as the maximum average daily temperature rise which will be permitted. However, because of the variations in both surface and flow characteristics of bodies of water, thermal criteria must be individually established for each site[114] and must be coordinated for large reaches of a stream or estuary. For example, many states allow a mixing zone within the immediate vicinity of a plant and only require that the discharge meet the standards outside this zone. However, if two plants on either side of a river are permitted a mixing zone one-half the width of the stream, a thermal block can be created which might prevent fish from reaching up-stream spawning grounds. Thus, the effectiveness of the state's enforcement programs depends not only upon the standards adopted but also upon the quality of the program's administration.[115]

EPA Administrator believes that "effective progress" is not being made as a result of the conference, he can recommend appropriate action to the state control agency. If, after a six month period, he is dissatisfied with the implementation of his recommendation, he may proceed to the hearing stage before a board appointed by the Secretary. The hearing is a more focused inquiry on specific pollution and the board may make remedial recommendations to the Administrator if it finds effective progress in abatement is not occuring. The Secretary then sends the findings and recommendations to the pollutors along with a notice specifying a reasonable time which cannot be less than six months to secure abatement. If abatement measures have not been undertaken after the period of time set after the hearing, he may request the Attorney General to bring suit under the same conditions he can call a conference. *See* Comment, *Federal Programs For Water Pollution Control*, 1 U.C.D.L. REV. 71, 88-92 (1969).

113. FEDERAL WATER POLLUTION CONTROL ADMINISTRATION, U.S. DEPARTMENT OF THE INTERIOR, REPORT OF THE COMMITTEE ON WATER QUALITY CRITERIA (1968).

113a. *See* PEOPLE, POWER AND POLLUTION, *supra* note 11, at 40-41 for a case history of the controversy.

114. *See* Comment, *Thermal Electric Power and Water Pollution: A Siting Approach*, 46 IND. L.J. 61, 84-90 (1970).

115. The National Technical Advisory Committee recommended that the temperature

Furthermore, thermal quality standards are especially vulnerable to judicial attack on the grounds that they are unreasonable.[116] Courts have required a showing that probable injury to a beneficial use will result from the discharge and, absent such a showing, have found that the discharge does not constitute pollution because the injury is speculative.[117]

Finally, thermal discharge regulation is complicated because states often do not have adequate technical information to assess a proposed discharge. To set thermal standards for a given site, it is not only necessary to know the theoretical effects of a discharge, but it is also necessary to determine the specific effects on the receiving waters in question. The variable nature of streams and estuaries makes it difficult to generalize—especially if only laboratory studies are used to support the standards.[118] Even if field work has been done, it may not be the

---

criteria apply only outside a mixing zone but provided that: "Mixing should be accomplished as quickly as possible through the use of devices which insure that the waste is mixed with allocated dilution of water in the smallest possible area." To avoid thermal blocks they proposed:

> It is essential that adequate passageways be provided at all times for the movement or drift of the biota. Water quality criteria favorable to the aquatic community must be maintained at all times in these passageways. It is recognized, however, that certain areas of mixing are unavoidable. These create harmfully polluted areas and for this reason it is essential that they be limited in width and length and be provided only for mixing. The passage zone must provide favorable conditions and must be in a continuous stretch bordered by the same bank for a considerable distance to allow safe and adequate passage up and down the stream, reservoir, lake or estuary for free-floating and drift organisms.
>
> The width of the zone and the volume of flow in it will depend on the character and size of the stream or estuary. Area, depth, and volume of flow must be sufficient to provide a usable and desirable passageway for fish and other aquatic organisms. Further, the cross-sectional area and volume of flow in the passageway will largely determine the percentage of survival of drift organisms. Therefore, the passageway should contain preferably 75 percent of the cross-sectional area and/or volume of flow of the stream or estuary.

In 1968 Florida proposed to allow a "reasonable mixing zone" for a discharge in Biscayne Bay, which had naturally reached the upper tolerance level of many species, but at the time Florida Power and Light applied for a discharge permit it did not have sufficient data on which to define the zone.

116. Note, *Water Quality Standards in Private Nuisance Actions*, 79 YALE L.J. 102, 107-09 (1970).

117. *See* Reserve Mining Co. v. Minnesota, 2 ERC 1135 (D. Minn. 1970) which held it would be speculative to classify the discharge of tailings pollution under Minn. Stat. § 115.01, subd. 5 which referred to "actual or *potential*" pollution (emphasis added). The only evidence of impairment of a beneficial use of the water was "the increased display of the 'green water phenomenon' and the disappearance of a proportion of the scud, a small shell creature which serves as food for smelt and small trout." *Id.* at 1144. *See also* North Suburban San. S. Dist. v. Water Pollution Con. Comm'n, 281 Minn. 524, 162 N.W.2d 249 (1968).

118. Studies may be based on acute rather than chronic conditions so that they tell what will happen to a species if it is subject to a rapid temperature rise but not what will occur in adjustment to a gradual temperature rise. Biologists have charged that studies based on acute data are safer than one might hope. McWhinnie, *The American Public and*

type which will tell an administrator whether a discharge will be harmful.[119] This can create a vicious circle—often the only way to tell if a proposed discharge will be harmful is to monitor it, and unless there is a clear case of potential damage (*e.g.*, if the water temperature was already approaching the lethal limit of a species) the state agency is forced to approve the permit with the condition that the utility finance monitoring studies.

These difficulties in regulating thermal discharges suggest that the burden of proving the harmlessness of the discharge should be placed on the utilities. Professor Willard Hurst has argued that developers have been protected by placing the burden of proof on protesters because of a notion that development is beneficial to society and thus should be encouraged.[120] Today, however, we are suspicious about unrestrained technological development because we know too little about its second order consequences. Thus, it seems proper to shift the burden of proof to the initiator. But, the consequences of this shift need to be better understood. In many instances it is unreasonable to require a utility to prove that its discharge will not be harmful since the effects of the discharge on specific waters often cannot be determined. No reputable scientist will testify in advance that a proposed discharge positively will or will not be harmful.[121] Scientific criticism of projected damage studies generally concludes that the study was not comprehensive enough or still leaves too many variables unknown. Nevertheless, because the effects may be irreversible, the utility should be required to produce the best scientific information available and should undertake further studies if the regulatory body decides that current information is inadequate.[122] This shift in the burden to pro-

the Pingpong Game, Power Production & Protection of the Lake Proceedings, 2ND ANNUAL FOUR-STATE CONF. ON LAKE MICHIGAN (Open Lands Project, 1970).

119. "Traditionally, estuarine studies by various laboratories were oriented towards understanding distribution and life history aspects of single species, usually a recreationally or commercially important species." Mihursky, *Natural Resources Institute Special Report No. 1*, PATUXENT THERMAL STUDIES 3 (1969).

120. J. HURST, LAW AND ECONOMIC GROWTH 224 (1964) quoted in Krier, *Environmental Litigation and the Burden of Proof*, in LAW AND THE ENVIRONMENT 105, 107 (1970). *See also* Hanks, *The Right To a Habitable Environment*, in THE RIGHTS OF AMERICANS 146, 154 (1970).

121. "I do not think there is any scientist in the world that could design a program that would be statistically foolproof that would show every change that occurred and separate those changes from natural occurring changes and those produced by power plants and any other industry." *1968 Thermal Pollution Hearings*, *supra* note 18, pt. 2 at 709 (statement of Dr. Ruth Patrick, biologist).

122. Some states have done this either by regulation or practice. New York places the burden of proof on the discharger to establish that requirements are "unnecessarily

duce evidence should help identify cases where there is a high risk that a beneficial use will be impaired, define more sharply the risks that the discharge poses, and, if combined with a required post-discharge monitoring program, should serve to place the utility on notice that modifications in its plant operation or design may be required.

D. The Effect of the National Environmental Policy Act of 1969 on AEC Jurisdiction

The National Environmental Policy Act of 1969 (NEPA) contains both a long range and highly abstract statement of national objectives, and standards and procedures for the administration of existing programs. To implement the act each agency is required to file an environmental impact statement with the Council on Environmental Quality when "legislative proposals" or "other major federal action" are involved.[123] The important question for power plant siting problems is whether NEPA reverses *New Hampshire v. AEC* and thus requires the AEC to consider thermal effects in its licensing. The relevant section, 102(c), ambiguously requires only that "to the fullest extent possible" federal policies, regulations and public laws "shall be interpreted and administered in accordance with the policies . . ." of NEPA.[124]

The relationship between section 21(b) and NEPA was specifically considered in the Senate because the two pieces of legislation emerged at the same time from separate committees. Senator Muskie stated that deference to state water quality agencies was necessary because federal agencies like the AEC "have always emphasized their primary responsibility making environmental considerations secondary in their view. . . . By requiring compliance certification from the water pollution control agency . . . [the section] would assigu policing responsibliity to those agencies qualified to make an environmental decision and not those committed to carrying out other functions at minimum cost."[125] Section 102(c) of NEPA was amended in conference to delete the requirement that federal agencies make a finding of the detrimental

restrictive" in that modification would not impair their effectiveness under the best usage classifications established by the state. *New York Criteria Governing Thermal Discharges*, 6 NYCRR 704.2, *reprinted in* 2 Environ. Rep. State Water Laws 861:0602. Maryland has also placed the burden of producing information on utilities. *See Hearings on S.2752 Before the Subcomm. on Intergovernmental Relations of the Senate Comm. on Government Operations*, 91st Cong., 2d Sess., at 144 (1970).

123. 42 U.S.C. 4321 *et seq.* (1971).

124. 42 U.S.C. 4332 (1970).

125. 115 Cong. Rec. S.2111 (1969).

environmental impact statement. In Senator Jackson's words, "the compromise . . . provides that the licensing agency will not have to make a detailed statement on water quality if the State or other appropriate agency has made a certification. . . ."[126]

The compromise[127] was considered in a recently decided case, *Calvert Cliffs Coordinating Committee v. AEC*.[128] In *Calvert Cliffs*, Judge J. Skelly Wright sought to do what the court in *New Hampshire v. AEC* had eschewed—that is, to transform the AEC into an environmental protection agency. Fully cognizant of the Commission's lack of "over-enthusiasm" for implementing NEPA, Judge Wright held that NEPA requires the AEC to make its own determination of the thermal impacts of a plant and empowers it to impose, if it desires (and, he indicated, he hoped that it would), standards stricter than those imposed by the state certifying agency. *Calvert Cliffs* is premised on a newly emerging theory of the role of public interest developed in *Scenic Hudson*. It specifically rejects a traditional theory of administrative law which confines the court's role to ensuring that parties before the agency were accorded procedural due process.[129] It further implicitly distinguishes between those agencies which dispense benefits on a case-by-case basis and those with broad planning mandates to make political choices which require a "finely tuned and 'systematic' balancing" of interests such as environmental protection and technology.[130]

Judge Wright summarized NEPA and concluded that sections 102(2)(c) and (d) (which require impact statements and the study of

126. *Id.*

127. Initial suits urging that the AEC has jurisdiction were dismissed on the grounds that no final order had been issued by the Commission in the licensing proceeding. Thermal Ecology Must Be Preserved v. AEC, 433 F.2d 524 (D.C. Cir. 1970) and Lloyd Harbor v. Seaborg, No. 70 Civ. 1253 (E.D.N.Y. April 2, 1971).

128. 449 F.2d 1109 (D.C. Cir. 1971).

129. *See* EDF, Inc. v. Ruckelshaus, 439 F.2d 584, 597-98 (D.C. Cir. 1971):

> Strict adherence to that requirement [that administrators articulate the factors on which they base their decisions] is especially important now that the character of administrative litigation is changing. As a result of expanding doctrines of standing and reviewability, and new statutory causes of action, courts are increasingly asked to review administrative action that touches on fundamental personal interests in life, health, and liberty. These interests have always had a special claim to judicial protection, in comparison with the economic interests at stake in a ratemaking or licensing proceeding.
>
> To protect these interests from administrative arbitrariness, it is necessary, but not sufficient, to insist on strict judicial scrutiny of administrative action. . . . Judicial review must operate to ensure that the administrative process itself will confine and control the exercise of discretion. . . . When administrators provide a framework for principled decision-making, the result will be to diminish the importance of judicial review by enhancing the integrity of the administrative process. . . . (Citations omitted.)

130. 449 F.2d at 1113.

alternatives) seek "to insure that each agency decision-maker has before him and takes into proper account all possible approaches to a particular project (including total abandonment of the project) which would alter the environmental impact and the cost-benefit balance."[131] Several pages later he expanded this reading to conclude that only the AEC could undertake the balancing:

> Certification by another agency that its own environmental standards are satisfied involves an entirely different kind of judgment. Such agencies, without overall responsibility for the particular federal action in question, attend only to one aspect of the problem: the magnitude of certain environmental costs. They simply determine whether those costs exceed an allowable amount. Their certification does not mean that they found no environmental damage whatever. In fact, there may be significant environmental damage (e.g., water pollution), but not quite enough to violate applicable (e.g., water quality) standards. Certifying agencies do not attempt to weigh that damage against the opposing benefits. Thus the balancing analysis remains to be done. It may be that the environmental costs, though passing prescribed standards, are nonetheless great enough to outweigh the particular economic and technical benefits involved in the planned action. The only agency in a position to make such a judgment is the agency with overall responsibility for the proposed federal action—the agency to which NEPA is specifically directed.[132]

Given this interpretation of NEPA, it was logical to conclude that the AEC had the power to set standards at variance with those set by the states. This interpretation, however, is not consistent with the legislative history of section 21(b) of the Federal Water Quality Act.

Section 21(b) was disposed of on the ground that the legislative history was too meager to support the conclusion that state certification eliminated further AEC duties under NEPA in light of section 104 of NEPA which provides:

> Nothing in Section 102 and 103 shall in any way affect the specific statutory obligation of any Federal agency (1) to comply with criteria or standards of environmental quality, (2) to coordinate or consult with any other Federal or State agency, or (3) to act, or refrain from acting contingent upon the recommendations or certification of any other Federal or State agency.

---

131. *Id.* at 1114.
132. *Id.* at 1123.

Judge Wright construed Section 104 as making 21(b) certification a minimum condition to granting a license: "It does not preclude the Commission from demanding water pollution controls which are *more strict* than those demanded by the applicable water quality standards of the certifying agency."[133] This construction rests on the distinction between discharges which violate applicable water quality standards, and those which do not but still constitute pollution. However, such a distinction is not supported by the legislative history of 21(b) and NEPA, and runs counter to Senator Muskie's theory that state environmental agencies ought to have the final say in setting standards.

Further, Judge Wright's distinction is not supported by the commonly accepted definitions of water pollution and water quality standards.[134] Pollution is generally thought of as the specific impairment of the beneficial use of water. Standards, in theory, function to fix the desired beneficial uses and the scientific criteria and methods of supporting the uses.[135] In the initial stages of a water quality control program, it is not useful to tie a definition of pollution to administratively imposed standards because the desired level of abatement, and thus, the level of standards needed, is uncertain.[136] It is useful to give a court, as the federal legislation does, flexibility to find that a discharge constitutes pollution without reference to water quality standards, or, that it does not constitute pollution because the standard is unreasonable. It is true that 21(b) certification "does not mean . . ." that the state agency "found no environmental damage whatever," but it does imply that

133. *Id.* at 1124.

134. The history and theory of the standards approach to water pollution control is discussed in Hines, *Controlling Industrial Water Pollution: Color The Problem Green*, 9 B.C. IND. & COM. L. REV. 553, 584-94 (1968).

135. Pollution control measures may be applied without established standards. The federal government can bring an abatement action for the discbarge of pollutants without establishing standards for the water. 23 U.S.C. 116-(a) (1970). But, the statute contemplates that after standards have been established, they will form the basis for enforcement actions since a discharge which lowers the quality of the water below that required by the standards is subject to an abatement action. 33 U.S.C. 1160(c)(5) (1970).

If the discharge violates water quality standards, the federal government can bypass the conference and hearing procedure, *see* text accompanying notes 111-12 *supra*, and proceed to file a court action after giving 180 days notice to alleged violator. However, the consent of the governor of the state in which the discharge occurs must be obtained unless the pollution endangers the health and welfare of persons in another state. *See* Comment, *supra* note 112, at 95.

136. *See* Professor Michaelman's insightful discussion of the analogous question of whether private nuisance suits ought to be allowed against an activity which conforms to a comprehensive set of centralized regulations. Michaelman Book Review, *Pollution as a Tort: A Non-Accidental Perspective on Calebresi's Costs*, 80 YALE L.J. 647, 675-77 (1971).

the agency has decided that the discharge will not constitute pollution.

Judge Wright is, therefore, justifiably concerned that current concepts of pollution do not take into account long run damage, and that thermal discharges cannot be wholly regulated by reference to preset standards. But, his statement that "[c]ertifying agencies do not attempt to weigh the damage against opposing benefits" is not reflective of the regulatory process. That is exactly what they do in setting standards and issuing permits.[137] To require AEC review of the impact of the proposed discharge adds little except another layer to the process.

Judge Wright defines pollution as significant environmental damage which is not quite enough to violate applicable water quality standards. As we have suggested above, pollution should be defined in terms of a state's water quality standards. The distinction between a discharge which violates applicable water quality standards, and one which does not, but nonetheless constitutes pollution, appears to adopt the common assertion that state water quality standards are set too low (apparently on a theory of judicial notice).[138] This may be a valid assumption, but there is no occasion for judicial intervention if the legislature has considered the problem and implemented a solution. Section 21(b) was enacted after a review of the experience the states and the AEC had in regulating thermal pollution, and thus the defects in both approaches have been thoroughly explored. It was decided that, on balance, it is better to place the certifying authority in the states rather than in a federal agency which has an inherently conflicting mission, *i.e.*, that of both promotion and regulation. Judge Wright's hope that in some cases the AEC would decide that the environmental benefits of non-development outweighed the benefits of a nuclear power plant is a modern version of Don Quixote tilting at windmills,[139] and more importantly, it is precisely the decision that the Senate decided the AEC was highly unlikely to make. There is also less need for an additional layer of review because, under the Rivers and Harbors Act

137. *See, e.g.* NEW YORK PUB. HEALTH LAW § 1230. New York has adopted regulations for thermal discharge permits. 10 NYCRR 73. 11-19, *reprinted in* 2 ENVIRON. REP. STATE WATER LAWS 861:0703-06. The utility is required to prepare and submit a biological inventory of the area to be effected by the proposed discharge.

138. The charge is frequently made that standards are set too low for reasons such as industry domination of agency "advisory" committees. See Environmental Protection Act of 1970, *Hearings Before the Subcomm. on Energy, Natural Resources, and the Environment of the Comm. on Commerce*, 91st Cong., 2d Sess., 39-57 (1970).

139. The opinion vindicates the theory that public intervention should seek all possible forums, not to win an agency victory, but to mobilize for a legislative victory. *See* Like, *supra* note 94.

of 1899, the federal government can proceed directly against a utility if a proposed discharge causes thermal pollution.[140]

Calvert Cliffs is the first major judicial acceptance of the argument that NEPA expands the jurisdiction of federal licensing agencies. The question was considered during the hearings and in conference, but the precise relationship between NEPA and existing enabling legislation was not defined.[141] Section 102 requires that " to the fullest extent possible" all laws and regulations are to be interpreted in accordance with the policies of NEPA. The Conference Report substituted the above language for a section which provided that nothing in NEPA shall increase or decrease the responsibility of any agency created by other provisions of law. Section 103 requires all agencies to review their legislation to determine if the agency's enabling legislation permits full compliance. A strict reading of these sections in light of their legislative history suggests that the NEPA is not jurisdictional, but that it expresses a policy of statutory construction for agencies and courts to follow in resolving cases of doubtful statutory authority.[142] If the First Circuit's legislative history is correct, the Atomic Energy Commission Act is legislation which does preclude full compliance with NEPA, and *Calvert Cliffs* is inconsistent with *New Hampshire v. AEC.* However, there will be no opportunity for the Supreme Court to decide the issue because the AEC (under new chairmanship) has announced

140. United States v. Florida Power & Light Co., 311 F. Supp. 1391 (S.D. Fla. 1970). The court held that a discharge could be enjoined under the Rivers and Harbors Act but refused to do so because there was no showing of irreparable injury. The utility and the government reached a settlement which banned all direct discharges into Biscayne Bay after five years (a body of water whose natural temperature in the summer approached the lethal limit of many species), and required the utility to construct a canal through which the discharges would be made. *Current Developments,* 2 ENVIRON. REP. 521-22 (1971). Under Exec. Order 11547, all industries proposing to discharge wastes into navigable waters must obtain an effluent permit from the Corps. The program is poorly integrated with existing water pollution control programs and questions such as whether the Corps has the power to modify a 21(b) certificate remain unanswered. *See* MEYERS & TARLOCK, SELECTED LEGAL AND ECONOMIC ASPECTS OF ENVIRONMENTAL PROTECTION 160-72 (1971), and Rogers, *Industrial Water Pollution and the Refuse Act: A Second Chance for Water Quality,* 119 U. PA. L. REV. 761, 812-19 (1971).

141. The principal drafter of the original legislation, a professor of political science at Indiana University (Bloomington), asserted that "we are talking here in some cases of modifying or amending existing mandates to agencies." Senator Jackson, a lawyer, saw problems with this statement but was not in favor of a case by case examination of existing agency enabling legislation because it would delay passage of the bill. This is the extent of consideration of the problem. *Hearings on S. 1075 before the Senate Comm. on Interior and Insular Affairs,* 91st Cong., 1st Sess., 117 (1969).

142. The argument that NEPA is jurisdictional is made in Hanks & Hanks, *supra* note 4, at 251-58.

it will not appeal *Calvert Cliffs* and has enacted regulations which require it to perform the balancing of all environmental factors demanded by Judge Wright.[143]

IV. LOCAL AND STATE REGULATION OF PLANT SITING AND TRANSMISSION LINE LOCATION

A. Local Zoning and Public Utility Commission Preemption

Units of local government generally have the power to regulate utility site selection through zoning. They are often denied the power, however, to decide the location of the transmission line corridors because that is a matter of state-wide concern over which the utilities commission should have exclusive jurisdiction. The reason for this fragmented authority may be that site zoning is relatively easy to obtain, but transmission line corridors have often been opposed by municipalities and landowners. Because of AEC regulations,[144] large plants, especially nuclear ones, are located in small communities which are generally anxious to broaden their tax base.[145] This can encourage overly hasty approval and hence an inadequate review of the impact of the site on the community's land use pattern. For this reason the Supreme Court of at least one state, Washington, has imposed a higher standard on local planning commissions and legislative bodies for the conduct of rezoning hearings for large-scale industrial activities than has been required under traditional concepts of procedural due process. In *Chrobuck v.*

143. 36 Fed. Reg. 18071 (1971). The extent to which the AEC will make an independent review of all environmental considerations is not clear. The applicant is required to prepare an Environmental Report which is submitted at the time of application for a construction permit and then circulated to other federal agencies for comment. After comments have been received the Director of Regulation will prepare a "final detailed statement of the environmental considerations . . . ." The detailed statement will contain a final cost-benefit analysis which considers and balances the environmental effects of the facility and the alternatives available for reducing adverse environmental effects, as well as the environmental, economic and technical, and other benefits of the facility." A license will not, of course, be issued without a 21(b) certificate but such certification is only entitled to "due consideration." *Id.* at 18073. However, the project can still go forward even if serious environmental risks are disclosed by either the applicant or the Commission. In making this decision the Commission can consider "The effect of delay in the conduct of the activity upon the public interest." *Id.* at 18074. In the first major test of these regulations the AEC has allowed the Trogan nuclear plant in Oregon to go forward while the final environmental impact report is prepared, giving as its reason the high cost of delay and the power shortage in the Pacific Northwest. Wall Street J., Nov. 15, 1971, at 8, col. 2.

144. Electric Power and the Environment, *supra* note 27, at 9.

145. New England River Basins Commission, Environmental Evaluation of Seabrook, New Hampshire Nuclear Power Plant, Power and the Environment, Report No. 2, IV-A-1-3 (January, 1971).

Snohomish County,[146] an oil company secured an amendment to the county's comprehensive plan over the opposition of the local planning commission staff, and won a subsequent map amendment to locate a refinery in a 635 acre rural area previously designated for residential and recreational use. During the amendment hearing, the county planning commission refused to allow cross examination of the chairman of the board who had been sent on an "educational" trip to Los Angeles by the oil company. The court found no "dishonest, dishonorable or self-serving motives of conduct"[147] by the members of the planning commission, but voided approval by the two bodies. It was "driven to the conclusion that the unfortunate combination of circumstances . . . and the cumulative impact thereof inescapably cast an aura of improper influence, partiality and prejudgment over the hearings thereby creating and erecting the appearance of unfairness." The court's justification merits careful consideration:

> In so doing, we start with the premise that comprehensive planning and zoning proposes and imposes limitations upon the free and unhampered use of private as well as public property, and when such regulations are once enacted, the indiscriminate amendment, modification or alteration thereof tends to disturb that degree of stability and continuity in the usage of land to which affected landowners are entitled to look in the orderly occupation, enjoyment, and development of their properties. Perforce, by the very nature of our society, the initial imposition of zoning restrictions or the subsequent modification of adopted regulations compels the highest public confidence in the governmental processes bringing about such action. Circumstances or occurrences arising in the course of such processes which, by their appearance, tend to undermine and dissipate confidence in the exercise of the zoning power, however innocent they might otherwise be, must be scrutinized with care and with the view that the evil sought to be remedied lies not only in the elimination of actual bias, prejudice, improper influence or favoritism, but also in the curbing of conditions which, by their very existence, tend to create suspicion, generate misinterpretation, and cast a pall of partiality, impropriety, conflict of interest or prejudgment over the proceedings to which they relate.[148]

The opinion is a significant attempt to improve the zoning process by striking at one of its fundamental defects—the conflict between the

146. 78 Wash. 2d 884, 480 P.2d 489 (1971).
147. *Id.* at 496.
148. *Id.* at 495.

promotional and regulatory roles of the planning commission (and local legislative body). In theory the planning commission is to represent the community-wide interest in specific zoning decisions. Far too often in practice it consists of real estate developers or their proxies. However, unlike an agency like the AEC this conflict does not appear in the formal structure of the local procedure. Courts have thus tended to ignore the problem by classifying the decisions as legislative and retreating behind the fiction that they are presumed to be made on the basis of community-wide considerations. Accordingly, the presence of conflicts of interest has generally been iguored except in flagrant cases. *Chrobuck* is a step toward the more effective implementation of the fundamental guarantees of the rule of law: ". . . that deciding officers shall be independent in the full sense, free from external direction by political and administrative superiors . . . and inwardly free from the influence of personal gain and partisan or popular bias. . . ."[149]

In some states the public utility commission has the power to grant utilities immunity from local zoning ordinances which attempt to regulate transmission corridor routes.[150] In others, courts have reached the

149. Jones, *The Rule of Law and the Welfare State*, 58 COLUM. L. REV. 143, 145 (1958).

150. *See, e.g.*, N.J.S.A. 40:55-50 (1967). *See also* notes 151 and 162 *infra*. The Massachusetts Department of Public Utilities can exempt utilities from local zoning ordinances and can issue an order setting aside the zoning ordinance and permitting construction upon a finding that the utility's proposal is necessary for the convenience or welfare of the public. MASS. GEN. LAWS ANN. ch. 40A, § 10. But local authorities have considerably more power to force modification of transmission line routes.

Two separate orders are issued by the Department: one is a finding of necessity and convenience for a line along a certain location and the second is an authorization for a utility company to acquire needed lands by eminent domain. MASS. GEN. LAWS ANN. ch. 164, § 72. *See* Sudbury v. D.P.U., 343 Mass. 428, 179 N.E.2d 263 (1962). The statute provides for notification to the towns affected by the proposal, plus notice and a hearing in one or more of the affected towns. Once the eminent domain power is authorized for a particular project there are two limitations on its use. Land dedicated to another public use (including land of another public utility), may not be taken without the consent of the authority or company having jurisdiction over such land. The second is that the utility must acquire from the local government "all necessary rights in the public ways or public places . . . through which the line will or does pass." MASS. GEN. LAWS ANN. ch. 164, § 72. There is also a procedure by which "necessary rights" for crossing streets with lines are to be acquired from municipal authorities. The board of aldermen or selectmen are directed to hear applications for street crossing permits and to grant permission on such terms as will not "incommode the public use of public ways or endanger or interrupt navigation." MASS. GEN. LAWS ANN. ch. 164, § 72. A refusal to grant the petition of a utility for a street crossing may, after three months, be appealed to the Department of Public Utilities. MASS. GEN. LAWS ANN. ch. 166, §§ 121-22. But this appeal cannot be taken *unless* the applicant utility has been granted street crossing permits in either a majority of the towns through which the line will pass or in two adjoining towns along the proposed route. Thus, when a solid bloc of towns along a proposed transmission line route

same result by finding that the state and local regulations are in conflict, and that the state intended to preempt the field of utility regulation by creating a public utilities commission.

In public utility cases a conflict between state certification and local zoning is said to arise from the widely accepted premise that utilities are best controlled by legislation which is uniform throughout the state. This is consistent with the general rule of preemption which favors higher units of government because they have a political jurisdiction and concomitant planning responsibility which is statewide in scope.[151] Thus, in a leading New York case the court held that a local zoning ordinance which excluded a transmission line conflicted with the state public utility commission's authority because "[t]here is an absolute mandate by the State that petitioner [the utility] shall furnish and provide such service . . . and no local government shall nullify or interfere with that right and duty . . . without unequivocal and express statutory grant of authority. . . ."[152] The court flatly refused to find this authority in the zoning enabling legislation.

If the environmental standards are imposed by a state-wide agency, there is no reason for a court to hold that the public utility commission

---

are opposed to overhead construction of the line, and no two adjoining towns can be persuaded to permit the overhead line, the Department of Public Utilities is unable to hear an appeal and overrule the towns. While appeal may be taken to the courts, the Supreme Judicial Court has ruled that a town may refuse to permit overhead street crossings on esthetic grounds. "The presence of power lines across a public way can, in our view, disturb natural beauty sufficiently to create real annoyance to the public users of the way, particularly in a day when such beauty seems to be a rapidly diminishing asset." Boston Edison Co. v. Selectmen of Concord, 355 Mass. 79, 242 N.E.2d 868 (1968).

151. *See* Note, *Governmental Immunity From Local Zoning Ordinances*, 84 HARV. L. REV. 869, 878 (1970); Aviation Services Inc. v. Bd. of Adjustment, 20 N.J. 275, 282, 119 A.2d 761, 765 (1956).

152. Consolidated Edison Co. v. Briar Cliff Manor, 208 Misc. 295, 144 N.Y.S.2d 379, 384 (Sup. Ct. 1955). A New Jersey court had no trouble deciding the intent of the legislature vis-à-vis public utility zoning conflicts: "The lawmakers knew that if the zoning power of a municipality were paramount, it would probably be exercised with an eye toward the local situation and without consideration of the best interests of consumers at large in other communities whose convenience and necessity require service. . . . [I]f the local authorities were supreme the Board of Public Utility Commissioners could not compel a utility to provide adequate service if the zoning ordinance conflicted with the need for expansion or extension of its services within the municipality." *In re* Monmouth Consolidated Water Co., 47 N.J. 251, 258, 220 A.2d 189, 192 (1966). *Accord*, Duquesne Light Co. v. Upper Saint Clair, 377 Pa. 323, 105 A.2d 287 (1954) and Graham Farms, Inc. v. Indianapolis Power & Light Co. 249 Ind. 498, 233 N.E.2d 656 (1968). For a discussion of subsequent Pennsylvania cases, see Lansdale & Buchmann, *Regulation of Land Use Affecting Utilities*, 1967 ABA SECTION REPORT, PUB. UTILITY LAW 68, 70. *See* Note, *Zoning, State Utilities and Licensees*, 1965 WASH. U.L.Q. 209-11.

has paramount jurisdiction absent express statutory authority. The most useful role that a court can play in this type of conflict is to hold that the commission and the environmental agency have concurrent jurisdiction so that the legislature will be forced to devise a method of accommodating power and environmental interests. This solution was recently adopted by the California Supreme Court in *Orange County Pollution Control District v. Public Utilities Commission.*[153] The public utilities commission authorized the construction of a fossil fuel plant along the Southern California coast after the county air pollution control district had refused to issue a permit on the ground that there was insufficient evidence that the utility could meet a recently enacted regulation which limited the discharge of SO_2 to 200 pounds per hour. The court unanimously held that the commission had paramount jurisdiction only over local agencies which imposed regulations on public utilities,[154] and that there was no evidence of legislative intent to exempt power plants from compliance with air pollution district standards.[155] The commission's major argument was that the district was a local agency and would fail to protect statewide interests. However, the court noted that while California has a statewide air resources board, the major task of implementing state policy falls on county or regional boards approved by the county board of supervisors.[156] Thus, the court correctly reasoned that the interests of these districts were not purely local because they were legally separate entities, and more importantly, because their function was to implement state air quality standards pursuant to authority delegated by the state legislature.[157] The court concluded "that the Legislature has established one statutory scheme for the general regulation of public utilities, another for the general regulation of air pollution."[158]

---

153. 4 Cal. 3d 945, 484 P.2d 1361, 95 Cal. Rptr. 17 (1971).

154. *Cf.*, Los Angeles Ry. Corp. v. Los Angeles, 16 Cal. 2d 779, 108 P.2d 430 (1940) holding the PUC's jurisdiction is paramount if the matter is of state-wide concern.

155. An alternative ground for decision would have been that the utility failed to exhaust its administrative remedies by failing to appeal from the denial of the permit by the air pollution control district. The court's decision to go to heart of the merits may be punishment for the utility's decision to attempt to hide behind the public utility commission's power when blocked by the district.

156. CAL. HEALTH & SAFETY CODE §§ 24198 and 24224(a) (West Supp. 1971).

157. It is significant that the regulation was subsequently adopted by all districts in the South Coast basin, as this shows the court to be correct in its theory that the regulation was in part, as well as the theory, comprehensive and covered the entire region affected by the problem.

158. 4 Cal. 3d at 953, 484 P.2d at 1367, 95 Cal. Rptr. at 23.

This same result can be reached when a city or county which has not been expressly preempted by the state attempts to regulate the route chosen by the utility, or the design of its transmission towers. The fact that a public utilities commission occupies a position superior to the local agency in the political hierarchy does not imply that it has special competence to protect environmental values. And, the requirement that the utility perform specific services does not imply a legislative decision to grant it immunity from local land use regulation. The broad rationale of *Orange County Pollution Control District* is that state environmental and energy policies are entitled to equal weight unless the legislature has indicated a clear preference or created a forum with a mandate to resolve the conflict.

Further, the regulation of land use patterns for esthetic reasons (which is increasingly recognized as a valid zoning purpose) serves both local and statewide interests. Few states have effective statewide planning and control, and as a consequence, state land use policy must be administered by units of local government which are technically agents of the state.[159] Judicial fears that these local agencies will hamper the development of power plants can be relieved by the creation of judicial standards which distinguish on the one hand between the power of a city to restrict the choice of routes considered environmentally detrimental or to condition approval of routes on design and other modifications, and, on the other attempts to exclude the utility completely or to require conditions that impose on it unreasonably prohibitive costs.[160]

159. *See* State v. Jersey Central Power & Light Co., 55 N.J. 362, 262 A.2d 385 (1970). The Supreme Court held that a utility which did not apply for state exemption under N.J.S.A. 40:55-50 (1967) remained subject to local regulation and that it was not the function of a court to consider the reasonableness of a zoning ordinance because "some local power through zoning exists as to any utility installation, but with the final 'say-so' resting in the state agency, subject to judicial review." 262 A.2d at 388.

Cf. Note, *supra* note 151, at 878, and *In re* Presnell v. Leslie, 3 N.Y.2d 384, 165 N.Y.S.2d 488, 144 N.E.2d 381 (1957) (no federal preemption of local regulation of radio towers by FCC licensing of amateur radio operators) and Thompson Industries v. Port Washington North, 55 Misc. 625, 286 N.Y.S.2d 187 (1967) (FAA promulgation of Helliport Design Guide was not evidence of intent to preempt local regulation of helliport locations).

160. Detroit Edison Co. v. Wixom, 382 Mich. 673, 172 N.W.2d 382 (1969) is a good illustration of the possible use of this standard. The utility had purchased a four mile right of way through a city for the construction of a 40 mile transmission line. Ten years after the route was chosen and one year after commission approval, the Wixom city council passed an ordinance prohibiting overhead towers in excess of 100 feet and required city approval for all overhead lines intended primarily for service areas outside the city. The utility, in compliance with a public service commission requirement, planned to construct 130 foot towers. The Michigan Supreme Court held that the ordinance was a taking of vested property because the ". . . acquisition is an integral part of a contiguous

In most states, the legislature has indicated that both the regulation of land use and the supply of electricity are important state interests, but has not indicated the relative weights to be given when the two policies conflict. Courts could set standards to accommodate these two legislative policies along the lines of a recent Michigan court of appeals opinion which held that a utility was not immune from local zoning:

> The limits of this local power are coincidental with the reasonableness of the ordinance under all the circumstances. Supply and transmission of electricity are essential to the development of this State and the well-being of its citizens. The limits of local regulation must be construed in the light of this public purpose and their reasonableness of course must weigh their relation to local conditions with their effect on the broad purpose.[161]

However, such a standard may unreasonably expose the utilities to the danger that one community, or a small group of communities, acting under a higher preference for esthetics than those of surrounding communities,[162] could either prevent the development of the utility or cause serious problems "by the fact that the regulating political entity contains few, if any, of the customers who will have to pay the increased

---

land use (here a right-of-way) and substantial investment, (here over 6 million dollars), in total, unitary usage has been made in good faith . . ." *Id.* at 386. The court's decision to rest their result on constitutional grounds is unfortunate for it does not provide standards for future location conflicts. It would have been preferable had the supreme court expanded the reasoning of the intermediate appellate court by formulating a standard which distinguished between regulations invalid because they expose the utility to costs not imposed by other towns along the route, and those which are valid because they reflect the town's legitimate interest in protecting its amenity levels as a part of a uniform pattern of regulation.

161. 10 Mich. App. 218, 159 N.W.2d 230, 232-33 (1968), *rev'd on other grounds*, 382 Mich. 673, 172 N.W.2d 382 (1969).

162. The problem is illustrated by the history of transmission line regulation in Ohio. State *ex rel.* Cleveland Illuminating Co. v. Euclid, 169 Ohio St. 476, 159 N.E.2d 756, *aff'd on reconsideration*, 170 Ohio St. 45, 162 N.E.2d 125 (1959) held that OHIO REV. CODE 4933.13 (1954) expressly permitted municipalities to regulate the construction of plants and transmission lines. Specifically, they held that a city could require a 33 kilovolt (KV) transmission line, which would pass through an industrial district, to be placed underground to eliminate safety hazards, even though a master had found that the line would be safe above ground. The decision was reversed by the legislature. OHIO REV. CODE 4905.65 (Supp. 1970). A municipality cannot exclude or require the undergrounding of lines in excess of 22 KV if the service is necessary for political subdivisions other than the one imposing the regulation and the line would not affect the city's general welfare to a greater extent than those other areas affected by the overhead lines. The statute was upheld against a challenge that it violated the home rule rights of Ohio cities. Cleveland Illuminating Co. v. Painesville, 10 Ohio App.2d 85, 226 N.E.2d 145, *aff'd* 15 Ohio St.2d 125, 239 N.E.2d 75 (1965).

rates that may be required by onerous regulations."[163] But this is an overly constricted view of the problem. The benefits derived from high quality open spaces and other esthetic requirements are not limited to the local community imposing the stricter standards; they are a matter of statewide concern and inure to the benefit of all. Thus, it is proper for people outside the immediately benefiting community to bear part of the cost. However, when the stricter local regulations are not the result of pure esthetic improvements, but are, for example, the result of more rigorous procedural requirements (such as multi-layered administrative hearings), then the cost should not be borne by the community actually using the utility but should be borne by the community imposing the requirement. Obviously, the better solution is to have a state-wide agency decide the environmental questions involved in corridor and design decisions. But, in the interim this judicial approach might have the beneficial impact of encouraging community cooperation in planning for utility expansion.

B. Environmental Regulation by Public Utility Commissions

This discussion of local zoning as a means of utility site selection control suggests the need for a state-wide forum to resolve these conflicts. Many states have achieved this result by establishing a public utilities commission. It is a logical institution to undertake the difficult task of accommodating both power and environmental interests not because commissions have special competence in environmental regulation nor because they are prepared to give power and environmental interests equal weight in decisions, but rather because they have the authority to finance decisions recognizing environmental values. The commission can include the cost of pollution abatement facilities or design modifications in the utility's rate base.[164] Moreover, commissions have some

163. Lansdale & Buchmann, *supra* note 152, at 75.

164. *Re* Commonwealth Edison Co., No. 55149 85 P.U.R.3d 199 (Ill. Comm. Comm'n 1970). Commonwealth Edison, a Chicago utility, was granted a 7% rate increase for urban and industrial service but the increase was conditioned on the utility's applying 50% of the increase to take "all steps technologically and economically feasable to reduce and abate pollution of the environment by its operations . . . ." 85 P.U.R.3d at 229. A recent Michigan Public Service Commission opinion indicates that utility management may have wide discretion to err on the side of environmental protection in deciding how much pollution control equipment to install. In the Midwest utilities, the states and the federal government have long been at odds over the establishment of a thermal policy for Lake Michigan. In an effort to avoid expensive and time consuming litigation with conservation organizations, a Michigan utility agreed to construct cooling towers for a plant on Lake Michigan. Utility management contended that the towers were not presently necessary to protect the ecology of the lake but sought commission approval to

authority to influence the amount of power consumed by users. They can discourage the use of electricity by modifying rate structures like block rate pricing (lower rates for increased consumption of electricity) for uses which might properly be classified as marginal.[165] It is unrealistic, however, to expect commissions to decide how much electricity and energy our society should use. If the question of how much industrial growth we "need" is to be resolved as a conscious public policy choice, it can only be done through the political process.[166]

From an environmental standpoint, one of the most serious defects in modern public utility commission regulation is the widespread practice of allowing a utility to choose a site, undergo extensive planning and design, and in some cases to commence actual construction, before a certificate of public convenience and necessity is required.[167] The result is, of course, that the commission finds it extremely difficult to deny the permit at such a late and costly stage. At best, the commission generally approves the permit request with some conditions attached. Thus, in most states it will be necessary to expand the powers of the public commissions beyond their traditional role of general consumer protection—which made rates, under-financed utilities, and the public-private power balance their prime concerns. In 1968, for example, Maryland, by statutory provision,[168] required its public util-

include them in its rate base. The Commission neither approved nor disapproved the agreement on the grounds that at the present time the extent of the costs were "conjectural" and thus inclusion in the rate base should be deferred. The Commission stated that it wonld not interfere in management action unless there was an abuse of discretion, or the decision was substantially detrimental to the interests of the public, and found neither present. The utility was authorized to include the towers in the commission's uniform system of accounts but was told that a decision as to whether the expense would be included in the rate base wonld be deferred until an application for a rate increase was made. *In re* Consumers Power Co., 3 ERC 1001 (Mich. Pub. Serv. Comm. 1971).

165. *Hearings on Intergovernmental, supra* note 14, at 230 (statement of Charles E. Olson and John Cumerland, University of Maryland). *See* Note, *Power and the Environment: A Statutory Approach to Electric Facility Siting*, 47 WASH. L. REV. 35, 50-51 (1971). Another area of utility practice that has come under scrutiny is the active promotion of the use of electricity. State commissions have begun to regulate these activities more strictly. *See* ABA, 1971 ANNUAL REPORT, SECTION OF PUBLIC UTILITY LAW 100-01. There is no easy answer to formulating regulatory policy for the utility can support block rate pricing—on the theory that it provides built-in protection against a recession because revenues can fall less rapidly under such a structure—to counter environmentalist objections that the rate structure is perverse because it stimulates demand. *See id.* at 235.

166. *See* d'Ange & Hunt, *supra* note 3 (a plea for a national economic policy to decrease resource-use level).

167. In 1969 only 26 states required a certificate of public convenience and necessity prior to construction. ELECTRIC POWER AND THE ENVIRONMENT, *supra* note 27, at 56.

168. MD. ANN. CODE art. 78, div. 54(A) (1968). The statute only applies to plants or overhead transmission lines designed to carry an excess of 69,000 volts.

ities commission to hold pre-construction hearings on plant location before the certificate of public convenience and necessity could be granted. This barred the utility from commencing construction or using the power of eminent domain until it obtained the certificate.

In addition to the traditional criteria of reliability and capacity to serve the market, the Maryland statute also requires the commission to give "due consideration" to the impact of the project on "aesthetics, historic sites, and, when applicable . . . air and water pollution." A similar but stronger statute was passed by Vermont in 1969.[169] The Vermont commission must find that the project "will not have an undue adverse effect on aesthetics, historic sites, air and water purity, the natural environment and the public health and safety" before a certificate can be issued. Thus, in Maryland the commission can trade off the need for power against substantial environmental degradation after a full hearing while the Vermont commission appears more constrained from making this choice.

Another major defect in the existing decision-making processes is the insufficient weight attached to environmental questions. Methods like those discussed above help solve the timing problem by bringing the commission's regulating function into the process at an earlier stage, but they do not insure that the commission will attach sufficient weight to the environmental considerations involved. If the range of possible alternatives is to be fully considered, the commission must formulate its own environmental criteria against which each application can be judged. The courts, close to the limits of their capacity to deal with these substantive questions of environmental quality,[170] increasingly defer to commission decisions unless they are clearly unreasonable or unlawful.[171] However, the commissions are themselves deferring to the decisions of the utilities, who base their decisions on

169. VT. STAT. ANN. tit. 30, sec. 248(4) (1969).

170. *See* Professor Louis Jaffe's review of J. SAX, DEFENDING THE ENVIRONMENT in 84 HARV. L. REV. 1562, 1566-68 (1971). The basic problem is that natural resources decisions are better dispensed in terms of a variety of goals rather than a single goal such as the defendant's right to a fair trial. Such decisions are inherently political and are better dealt with through political institutions. As Professor Jaffe reminds us:

> Where the legislature has faced up to the contemporary problems and has made its policy clear, there is simply no basis for a court's disallowance of an administrative determination which satisfies the rules of law and has fairly and substantially met the burdens imposed by the rules for the protection of the environment.

Id. at 1568.

171. *See* Bowers v. Pennsylvania Public Utility Comm'n, 204 Pa. Super. 82, 203 A.2d 324 (1964).

cost, safety and maintenance factors and not upon environmental concerns. Further, while many states have expanded the jurisdiction of the commissions to include consideration of environmental effects, they have failed to establish standards that insure that environmental considerations will be entitled to equal weight with traditional efficiency considerations. Thus, in New Jersey the commission must find that the route is "reasonably necessary" to enable the utility to perform its service and that the community zoning plan was considered.[172] However, the cases indicate that this requirement places only a minor burden on the utilities whose site and route choices will be approved by both the commission and the courts if the interests of the local community and any available alternatives are considered to be "outweighted" by cost considerations.[173] An almost impossible burden is placed on those challenging a corridor or site selection, which provides little incentive for the commission to question the utility's judgment except in extreme cases.[174]

These problems cannot be solved merely by enacting legislation which requires the commission to consider environmental impacts in its licensing procedures. In 1963 the California Public Utility Commission held that its broadly worded enabling legislation gave it the authority (and even the duty) to consider environmental impact in the

172. *In re* Public Service Electric Gas Co., 35 N.J. 358, 376-77, 173 A.2d 233, 243 (1961).

173. *In re* Public Service Electric & Gas Co., 100 N.J. 1, 241 A.2d 15 (1968) held that consideration of six alternative routes discharges the utility's duty to consider the proposed project's impact on the community. *See also* White Mountain Power Co. v. Whitaker, 106 N.H. 436, 213 A.2d 800 (1965). Public utility commissions have been worried about the equity of requiring all of the utility's customers to pay for undergrounding that directly benefits a small group, apparently on the theory that it should be financed as a special benefit. In New Hampshire Elec. Co-op., 71 P.U.R. 3d 414 (N.H. P.U.C. 1967) the Commission refused to require the undergrounding of a 310 foot transmission line across from the mainland to a lake over the esthetic objections of lake front owners, but gave the property owners a chance to negotiate with the utility over the payment of the cost of undergrounding. In most transmission line cases (although perhaps not in this one) it would seem proper to spread the cost of the undergrounding through the rate base because otherwise those paying for the undergrounding would be producing a public good—an amenity level—but would be unable to recover the cost by charging all those who benefit from it.

174. Under the present system the issue of alternative routes is often raised for the first time by intervenors before the commission. Utilities have effectively countered demands for route re-consideration at this late date by arguing that the cost of delaying construction to consider alternatives would be large; the commission has used this as major reason for rejecting the proposed alternatives and granting the certificate of public convenience and necessity. *See* Kouba, *Regulating Transmission Lines in California—Insulation from Aesthetic Shock*, 22 HAST. L.J. 587, 604-06 (1971).

location of facilities. The result has been that corridor route challengers face one of the heaviest burdens of proof in the country and the traditional imbalance between power and the environment remains unaltered. The standard was defined as follows:

> The Commission should only interpose its jurisdiction in adjudging public convenience and necessity in matters relating solely to aesthetics where the proposed action of a utility is of the type which shocks the conscience of the community.[175]

In a subsequent decision the commission spelled out the implications of the standard—it will consider esthetics but only "in association with its primary duty to assure that adequate and reliable service is provided to the public at rates which are just and reasonable."[176] The complainants have the burden of proving an adverse environmental impact and of establishing a more desirable and feasible alternative route; this includes questions of technical feasibility, cost and right of way acquisition.

This seems to be an inappropriate standard for a public utility commission to adopt. In constitutional law the permissible limits of governmental action are stringently defined by the courts because of the preferred status of individual rights. However, there is no analogous justification for raising low-cost electric power to a similar position vis-à-vis esthetic and environmental values. One could assume, we believe erroneously, that state power facility location policy is contained solely in the commission's enabling legislation and requires deference to the utility's efficiency decisions so that consumers can enjoy low power rates. This assumption ignores other statutes which express a concern for environmental values and the protection of the visual landscape. Such statutes suggest that the commission's public interest mandate is broader than the mere promotion of efficiency, and may indeed compel the commission to conclude that countervailing esthetic benefits dictate the selection of a more costly route or underground transmission lines.

If environmental concerns are to receive equal weight in commission proceedings two reforms are necessary. First, if the complaint makes out a prima facie case that utility action will have an adverse environmental impact and that feasible alternatives exist, the burden

175. Ligda v. P.U.C., 61 Cal. P.U.C. 1, 5 (1963). *Accord, In re* Commonwealth Edison, 85 P.U.R.3d 199 (Ill. Comm. Comm'n 1970).

176. Angell v. Pacific Gas & Elec. Co., Cal. P.U.C. Case No. 8929, Dec. No. 77003 (1970) *discussed in* Kouba, *supra* note 174, at 595-99.

of proving the necessity of the plan should shift to the utility.[177] This responsibility should improve the utility's decision-making procedures and spur them to give greater consideration to decisions which will maximize environmental protection. All information is costly and the technical information necessary to evaluate the reasonableness and feasibility of alternative designs and routes is especially costly. Moreover, information is to a large extent a public good so it is unlikely that enough will be produced by voluntary organizations.[178] Thus, the information will have to be developed by either the utilities or regulatory agencies. Eventually the general public will pay either as taxpayers or consumers, but the case seems stronger for imposing the burden on the utilities because research and development "funding by the electric utilities represents an investment by consumers to assure future price and availability of electricity."[179]

Second, the commission should assume the responsibilities mandated by *Scenic Hudson*,[180] and undertake studies in each case to deter-

177. The leading case establishing this principle is Texas Eastern Trans. Corp. v. Wildlife Preserves, Inc., 48 N.J. 261, 225 A.2d 130 (1966). The court held that a private wildlife refuge could challenge a utility pipeline condemnation and if both a prima facie case of adverse environmental impact and the existence of a feasable route were shown, the burden of proof shifted to the condemnor: "[T]he *quantum* of proof required of this defendant to show arbitrariness against it should not be as substantial as that to be assumed by the ordinary property owner who devotes his land to conventional uses." The utility ultimately won after a full trial on the merits. 49 N.J. 403, 230 A.2d 505 (1967). *See* Tarlock, *Recent Natural Resources Case*, 8 NAT. RES. J. 1 (1968).

178. *See* Calabresi & Bass, *Right Approach, Wrong Implications: A Critique of McKean on Products Liability*, 38 U. CHI. L. REV. 74, 98 (1970).

Discussing the problems of consumer products information, Davis and Kamien argue: "The point is that knowledge of the characteristics of a product is very analagous to a public good. . . . Although there are obvious costs associated with the production of knowledge of a product's characteristics, the producer of that knowledge cannot help to recoup anything even approximating its value to the consumer. . . . This situation means . . . that the producer of this knowledge cannot afford to produce as much information as would be socially optimal. . . ." Davis & Kamien, Externalities, Information and Alternative Collective Action, The Analysis and Evaluation Of Public Expenditures: The PPB System, 91st Cong., 1st Sess., 67, 72 (1969). The general theoretical framework for this argument is developed in M. OLSON, THE LOGIC OF COLLECTIVE ACTION 33-43 (1968). Applied to environmental action interest groups such as the Sierra Club, it suggests that the organization might provide some information about power plant problems but prior to the provision of what society would consider an optimal amount they would shift their resources to purchase of other goods—say wilderness areas—that yield higher returns to larger numbers of the organization. *See* Krier, *Environmental Watchdogs: Some Lessons From a "Study" Council*, 23 STAN. L. REV. 623, 644-65 (1971).

179. ELECTRIC POWER AND THE ENVIRONMENT, *supra* note 27, at 42. The major role of regulatory agencies should be to remove the present uncertainty over whether utilities can recover research expenditures; this uncertainty is alleged to be a major factor in keeping research "far below an appropriate level for an industry of this size." *Id.*

mine if the route chosen by the utility will minimize environmental damage. Although information at the engineering level can best come from the utility itself, improved environmental-impact data can best come from organizations, whether public or private, that are primarily engaged in such work, *e.g.*, universities and government agencies, and that are free from the pressure to advance their client's interests. Cost considerations may dictate that few transmission lines be placed underground but commissions have more flexibility in deciding which route will produce the least amount of landscape blight.

New York moved in this direction by its transmission line siting bill passed in 1970[181] but deferred consideration of power plant siting legislation by creating a special committee to report to the 1971 session of the New York State legislature. The intent of the transmission siting structure is to consolidate "all matters of state and local law, in a single proceeding to which access will be open to citizens, groups, municipalities and other public agencies. . . ."[182] A utility desiring to construct a transmission line with a capacity greater than 125 KV must obtain a certificate of environmental compatability and need from the public service commission.[183] To improve the quality of information available to the understaffed commission the utility must furnish "a summary of any studies which have been made of the environmental impact of the project. . ." and a description of "any reasonable alternative locations for the proposed facility."[184] The statute does not, however, require environmental impact studies to be made by the utility. The commission cannot issue a certificate until it finds that "[t]he facility represents the minimum adverse environmental impact, considering the available technology and the nature and economics of various alternatives, and other pertinent considerations."[185] Although the traditional defenses to environmental modification—cost and the unavailability of technology

180. *See* Section III(A) *supra.*

181. N.Y. PUB. SERV. LAW § 120-30 (McKinney Supp. 1971). For a discussion of the regulation of power plant siting in New York, *see* Note, *The Legal Setting of Nuclear Powerplant Siting Decisions: A New York Controversy*, 57 CORNELL L. REV. 80 (1971).

182. Chapter 272, 1970 New York Legislation, sec. 1. The utility is required to give notice both to officials of towns through which the transmission line will pass and to certain state departments. In addition the utility is required to give notice to the town residents by publication. Any resident may become a party to the proceedings by filing a notice of intent with the commission. N.Y. PUB. SERV. LAWS §§ 122(2)(a)(v)(b) and 124(h) (McKinney Supp. 1971). The same procedure is specially available to "any domestic non-profit corporation" concerned with environmental protection. *Id.* § 124(1)(i).

183. *Id.* § 120-21.

184. *Id.* § 122(1).

185. *Id.* § 126.

—are preserved, this law should be a model for other states because it represents the highest affirmative duty yet imposed on a public utility commission to examine the environmental impacts of a proposed transmission line route.

V. INSTITUTIONAL REFORMS

Open dissatisfaction with site selection procedures began in late 1968, when the White House Energy Policy Staff published their study entitled *Considerations Affecting Steam Power Plant Site Selection.* Although the study scrupulously avoided recommendations, the facts suggested several major problems with selection procedures. These included the secrecy of utility planning for new construction (as exemplified by Vermont Yankee), the delay caused by the proliferation of license and permit requirements, the oblique nature and increasing incidence of judicial review of siting decisions, and the wide differences in standards applied by the several states.

In 1969 the Energy Policy Staff formulated recommendations for the federal government, while several state legislatures enacted new statutes. The EPS' second volume, *Electric Power and the Environment,* was transformed into proposed legislation early in 1971. This second report generally ignored choice-of-fuel questions and concentrated on the institutional aspects of choosing site and design. The EPS proposals adopt the strategy of federal air and water pollution legislation. They encourage the states to adopt standard procedures for licensing new thermal generating plants and EHV construction under the penalty of federal agency licensing in states which fail to adopt proper procedures. The principal procedures are:

(a) The licensing of new facility construction by special multi-agency and multi-interest site certifying councils;

(b) The pre-emption, by such a proceeding, of all other state and local permit and license requirements;

(c) The retention of all applicable requirements of federal law governing new facility construction except for section 102 of the NEPA;

(d) The public disclosure, several years ahead of time, of new construction plans and intentions of private and public electric power entities;

(e) Notice, public hearings and limited judicial review of the

decisions of site selection councils in their exercise of the foregoing powers.

The first three procedures are generally the components of "one-stop licensing." The last two are the principal components of "open planning."

A. One-Stop Licensing

The government's increased reliance upon permit-granting regulatory mechanisms has raised the number of permits and licenses required to construct and operate thermal generating stations and EHV lines.[186] To alleviate the inefficiency of this multi-licensing trend, *Electric Power and the Environment* recommended the adoption of "one-stop licensing" which would require each concerned state agency to send a representative to a site-certifying committee.

The first use of this procedure began in Washington in 1970.[187] The Washington statute creates an evaluation council, composed of (1) the directors, administrators, or the desiguees of every conceivably concerned resources or planning agency, (2) the department of commerce and economic development, (3) the utilities and transportation commission, and (4) a representative of any county affected by an application.[188]

This statute was the result of a compromise between the utilities and the sponsors of a much stronger environmental bill. The original bill required both a site location and a design license, and public membership on the commission. It further specified 26 criteria for consideration.[189] The original proposal did not specify the relationship between between the commission's licensing powers and those of existing state and local agencies although the intent of the principal drafter was that it "should function as an inter-agency coordinating mechanism, with each authority retaining and exercising its existing statutory powers to prescribe conditions for—and perhaps to veto—design features of a particular facility or perhaps the location itself."[190] The utilities insisted

186. A case study of the construction history of a nuclear plant in Waterford, Connecticut indicated that between 1965 and 1970 the utility had to obtain nine major permits, licenses, and approvals from six federal, state and municipal agencies. *See generally* Electric Power and the Environment, *supra* note 27, at 7-14.

187. Wash. ch. 45, § 3, 41st Legis. 2d ex. sess. (1970).

188. *Id.* § 4(c).

189. H.B. 194 (1969).

190. Rogers, *Siting Power Plants in Washington State*, 47 Wash. L. Rev. 9, 23 (1971). Professor Rogers drafted the initial legislation.

that any legislation must guarantee them "one-stop" licensing. They were successful because the act provides that "the state preempts the regulation and certification of thermal power sites and thermal power plants,"[191] and that a certification "shall bind the state or any of the departments."[192] But these sections do not clearly answer the crucial question: Can the council supersede the authority existing agencies possess under their enabling legislation? The council first proposed that the utilities present "evidence of satisfying existing statutory criteria,"[193] but the utilities argued that this was inconsistent with a "one-stop" agency. The utilities' proposed guideline required them to:

> [s]ubmit information as to the extent of compliance with existing statutory criteria, requirements, standards and regulations of those state agencies which, prior to certification, have any legal authority over conditions or activities related to the site.[194]

The guideline adopted by the council rejected the utilities' position that they need not comply with existing state agency standards, but not as clearly as the initial proposal. It provides that the utilities must:

> . . . submit plans relating to satisfaction of existing statutory criteria, requirements, standards and regulations of those state agencies which, prior to certification, have any legal authority over conditions or activities related to the site.[195]

The guidelines on individual environmental matters are more stringent. For water quality, the utility is required to:

> (a) provide plans for the compliance with regulations relating to waters of the State of Washington; (b) provide plans for waste heat dissipation at all proposed sites including plans for off-stream cooling facilities for power sites located adjacent to fresh water bodies and estuarine locations.[196]

The Washington experience indicates that one-stop licensing can be either a means of preventing delays in plant construction, or a means of shielding utilities from regulation by agencies that have a statutory mandate to improve environmental quality. The purpose of creating a regulatory body to issue a single license should be to eliminate the

191. Wash. ch. 45 § 11(2), 41st Legis. 2d ex. sess. (1970).

192. *Id.* § 12(1).

193. Memo to Thermal Plant Siting Council, Proposed Guidelines For Thermal Power Plant Site Certification, William Rogers (University of Washington, April 20, 1970).

194. *Id.*

195. WASH. ADMIN. CODE 463-12-010(5).

196. WASH. ADMIN. CODE 463-12-025(2)(a).

utility's high costs resulting from construction delays necessitated by requiring as many as 20 to 25 permits for a single project. The utility needs to be protected from state agencies imposing inconsistent requirements after construction has begun,[197] but there is less need to extend this protection before the license is issued. The agency's primary function should be to coordinate the activities of the agencies with statutory jurisdiction over the plant.[198] If it is functioning properly, it will produce simultaneous, efficient consideration of the utility's plans by all interested agencies and thus eliminate the existing gantlet. Many conflicting policies and regulations could probably be harmonized by the licensing agency without resort to the power to preempt. But, if the agency can displace the statutory powers of specialized agencies there is a danger of shielding the utility from stringent regulation. This conception of one-stop licensing threatens to rob it of any value in accommodating environmental interests and energy demands. Further, it is conceivable that a court could find the latter alternative a violation of the equal protection clause.[199]

The bill which the administration has sent to Congress would encourage the other states to emulate Washington, except for the governor's veto power; it threatens to assume control of site certification as a federal function in any state which fails to adopt procedures for one-stop licensing within two years of the passage of the federal act.[200]

197. *See* Rogers, *supra* note 190, at 14-16.

198. This seems consistent with the intent of the federal legislation which "is one of factoring into the certification process the data, information, recommendations, findings or conclusions of those charged with the administration of environmental requirements and thereby to facilitate the intergrated decision of the certifying agency." Nassikas (Chairman of the FPC), *Coordination of Electric Power and Environmental Policy*, 4 NAT. RES. LAW. 268, 273 (1971).

199. Those still affected by the general regulatory program might complain that they were denied equal protection as the objects of an unreasonable classification, since pollution was now to be controlled by licensing all discharges except those in the electric power business. This has been described as an under-inclusive classification—"[a]ll who are included in the class are tainted with the mischief, but there are others also tainted whom the classification does not include." Tussman & ten Broek, *The Equal Protection of the Laws*, 37 CALIF. L. REV. 341, 348 (1949). Such classification systems have generally received judicial tolerance, providing they avoided such forbidden bases as race, religion, or ethnic origin. It would still be necessary for the state to establish, in constitutional litigation, that the reasons for singling out the electric power industry for different treatment were based on facts and were not arbitrary. Boortz Coal Co. v. Air Pollution Comm'n, 2 ERC 1744, 1749 (Comm. Ct. of Penn. 1971). *But see* Sigety v. State Bd. of Health, 2 ERC 1415, 1 ELR 20258 (Mont. Sup. Ct. 1971), holding an exemption from surface mining regulations for the sand and gravel industry a denial of equal protection to the indnstries being regulated.

200. H.R. 5277, 92d Cong., 1st Sess. (1971).

The states are to base their legislation on presidential guidelines covering site selection criteria, procedures for public participation and interstate cooperation, and assurances of adequate staffing for site certification councils.[201] After the state site certifying authority has been established and the federal guidelines have been issued, the consistency between the two must be determined. The determination is made by what the bill calls the "Federal certifying agency."[202] No specific agency is named; that choice is left to the President's discretion.[203] (The President's stated intention is to name the proposed Department of Natural Resources as the federal certifying agency,[204] but that option depends on congressional approval of the proposed reorganization of the cabinet.) The federal certifying agency will approve or disapprove the structure of each state site certifying authority. The federal agency must specify to the state affected its grounds for any disapproval and give the state a reasonable period to respond and make appropriate changes.[205] If this fails to bring about agreement, the state may appeal to a United States Court of Appeals and ultimately to the Supreme Court.[206]

---

201. *Id.* § 9. The section spells out the guidelines as follows:

(a) criteria for evaluating effects of proposed sites and facilities on environmental values;
(b) criteria for use in evaluating the relative environmental impacts of alternative sites;
(c) criteria for evaluating the projected needs for electric power;
(d) procedures to ensure full public participation in the certification procedures through public notice and opportunity for public hearings, consultation with appropriate citizens' groups, rights of intervention and appeal from decisions of the certifying body and other safeguards;
(e) procedures with respect to the formation of regional certifying bodies;
(f) procedures to assure proper consideration of multi-State impacts in certification proceedings;
(g) requirements with respect to staffing and technical and professional competence of State and regional certifying bodies.

Many of these criteria and procedures are spelled out or hinted at in ELECTRIC POWER AND THE ENVIRONMENT, *supra* note 27. The Administration presented "draft proposed federal guidelines" when committee hearings began in the House in May 1971. *Hearings on Powerplant Siting and Environmental Protection before the Subcomm. on Communications and Power, Comm. on Interstate and Foreign Commerce*, 92d Cong., 1st Sess., 240-46 (1971) [hereinafter cited as *Powerplant Siting Hearings*].

202. H.R. 5277 § 5(b), 92d Cong., 1st Sess. (1971).

203. *Id.* § 3(d).

204. Letter from Edward E. David, Jr. transmitting proposed legislation to Congress, reprinted in CEQ, The President's 1971 Environmental Program, at 242. In the interim, or in the event a Department of Natural Resources is not established, the Department of the Interior would be designated as the federal certifying agency. *Powerplant Siting Hearings, supra* note 201, at 240 (testimony of Hon. Rogers C.B. Morton, Secretary of the Interior).

205. H.R. 5277 § 5(d), 92d Cong., 1st Sess. (1971).

206. *Id.* § 5(e).

When the federal agency approves the state's approach it issues a "certificate of qualification of procedure"[207] (hereafter, a CQP). The bill makes the CQP "conclusive evidence" of the state agency's legal authority over the construction of electrical energy facilities.[208] By giving the CQP conclusive evidentiary value at least the procedural legitimacy of the state agency will not be in issue.[209]

The bill raises some problems in proposed relationships with other statutes. H.R. 5277 would require the decision of a site certifying authority to be "conclusive on all quesions of siting, land use, state air and water quality standards, public convenience and necessity, aesthetics, and any other State or local requirements . . ."[210] Further, it expressly preserves—with one exception—all applicable requirements under federal law for permits and licenses.[211] This major exception states that no environmental impact statement under § 102(2)(c) of the NEPA need be filed if the site certifying agency follows procedures "substantially comparable" to the review procedures of the Council on Environmental Quality.[212] These sections appear to diminish the weight given to environmental considerations in siting decisions because they undermine the existing authority of state environmental agencies. The other pertinent federal requirements, however, would provide for independent environmental review and in some instances restore the authority of state agencies and commissions. State water pollution control agencies, for example, have the power to certify a proposed project's compliance with its water quality standards on any federal permit application.[213] Under § 111 of the Clean Air Act, EPA is required to establish federal standards of performance for new stationary sources of air pollution; states which establish satisfactory enforcement programs may become the recipients of EPA's delegated authority to control new stationary sources.[214] Thus, if H.R. 5277 abolishes the requirement that a permit for a power plant be obtained from a state air quality agency, it either amends the Clean Air Act, which intention

207. *Id.* § 5(b).

208. *Id.*

209. *See* Testa v. Katt, 330 U.S. 386 (1947), which held that the federal government can force state courts to enforce federal penal statutes. The courts have held that the federal government can delegate the power of federal eminent domain to private parties such as Federal Power Commission licensees. Chapman v. Public Utility District No. 1, 367 F.2d 163, 167 (9th Cir. 1966).

210. H.R. 5277 § 7(a), 92d Cong., 1st Sess. (1971).

211. *Id.*

212. *Id.* § 16(a).

213. FWQA § 21(b), 33 U.S.C. § 1171(b) (1970).

214. 42 U.S.C. 4321 (Supp. 1971).

the bill disavows,[215] or disqualifies the states from acting as primary enforcers and pushes EPA into the direct enforcement role, which contravenes the policy of the Clean Air Act.[216] It would seem that the Congress will rewrite this aspect of the bill to at least leave air and water quality programs unaltered, or to define carefully the relationship between power plant siting and pollution control programs. Unfortunately, the latter option is unlikely because of the untidy structure of congressional committee jurisdiction.[217] Thus, H.R. 5277, for all its mighty labors, fails to accomplish true one-stop licensing. To accomplish this goal, Congress would have to divest all federal agencies of their licensing and permit granting authorities over emissions from electric power facilities and offer these responsibilities to the states. Given the political costs of such a move, and the danger that the new institution would offer little assurance that currently under-represented environmental interests would be given increased weight, alternatives to one-stop licensing must be explored.

One alternative is an "omnibus license." A central state licensing agency could be authorized to coordinate and schedule all permit and license applications and proceedings to be conducted by the several agencies and commissions according to their regular rules and procedures.[218] The coordinating authority would pass on the residual issues. If construction of the project seemed warranted, the coordinating authority would issue an omnibus license. This would be a single document incorporating the terms of the individual agencies and commissions with the terms set by the coordinating authority in its review of the residual issues.

Connecticut's 1971 siting legislation[219] establishes something anal-

215. H.R. 5277 § 7(a), 92d Cong., 1st Sess. (1971). Spokesmen for federal environment agencies reiterated their views to this effect before Congress. *Powerplant Siting Hearings, supra* note 201, at 311 (statement of Dr. Gordon J.F. MacDonald, member, Council on Environmental Quality); *id.* at 625 (statement of John Quarles, General Counsel, Environmental Protection Agency: "If the State air pollution control agency were to determine that a power plant would, at a given site, violate applicable ambient air quality standards, or the requirements of an approved implementation plan, then a certificate could not be issued.").

216. 42 U.S.C. § 1857(a)(3) (1967).

217. Power plant siting legislation has generally been referred to the Senate's Committee on Commerce and the House's Committee on Interstate and Foreign Commerce. Neither of these committees has jurisdiction over water pollution legislation and only the House committee has jurisdiction over air pollution.

218. This proposal is similar to recommendations made in the report by the New England River Basins Commission, LAWS AND PROCEDURES OF POWER PLANT SITING IN NEW ENGLAND, POWER AND THE ENVIRONMENT, REPORT No. 2, at 73-75 (1970).

219. 1971 Conn. Gen. Assembly, Pub. Act No. 575.

ogous to an omnibus license. The proceedings of the Connecticut Power Facility Evaluation Council preempt local government land use regulation,[220] but a power facility must otherwise conform to "applicable state and local laws and regulations issued thereunder, all of which shall be binding upon the applicant. . . ."[221] The statute also requires the council to consult with the principal resource agencies and to obtain their written comments on a proposed facility before issuing a license.[222] Thus, the resource agencies retain their permit-granting jurisdiction in Connecticut and have the opportunity to register their more general opinions in other forums. The composition of the Connecticut council differs significantly from that in other states, in that the resource agencies are not members. Their interests are represented by the Commissioner of Environmental Protection, who is the head of the department which houses most of the resource agencies. This relationship between the agencies and the Commissioner, plus the requirement that the agencies comment in writing on a proposal, would appear to satisfy the proposed federal standards for broad-based participation in decision-making.

Another partial approach to an omnibus license scheme is the nonstatutory review procedure devised by California in 1966. The umbrella Resources Agency formed a thermal power plant siting committee consisting of representatives from seven environmental agencies. Under the procedure the utilities voluntarily agreed to submit their site and design proposals for committee review prior to applying for federal and state licenses.

If the utility's plans are approved, it enters into a preconstruction agreement with the Resources Agency. In return for the applicant's concessions on design and construction, the seven separate agencies agree not to contest the utility's certificate applications before the Atomic Energy Commission and the state Public Utilities Commission. In the first use of this procedure a Pacific Gas and Electric Company plant near San Luis Obispo was approved after the utility made certain design modifications, undertook a monitoring effort in cooperation with the state and promised that if damage to the aquatic life occurred, it would provide "reasonable mitigation . . . provided such mitigation will not interfere with the construction of the plant unless otherwise agreed."[223] This form of agreement seems to represent the limit of the agency's

220. *Id.* § 12.
221. *Id.* § 10(a)(6).
222. *Id.* § 4(f).
223. *1968 Thermal Pollution Hearings, supra* note 18, Part IV at 1091-93.

effectiveness because as originally conceived the California procedure has several significant shortcomings.[224] It affects only the third level of decision-making, leaving the first two—choice of energy form and of site—to the initiative of an applicant. It makes no provision for involvement of the non-governmental sector of the environmental community. There is no provision for scientific studies of the natural resources involved by the state agencies entrusted with their care. The siting committee basically reacts to utility decisions which are difficult to reverse. Many of these shortcomings, however, may be relieved by the Power Plant Siting Coordination Act enacted in 1970.[225]

B. Open Planning and Judicial Review

Insufficient time to evaluate the impact of proposed power plant construction has been a complaint of environmental groups and state and local agencies. *Electric Power and the Environment* flatly stated that "[t]he public is not assured of advance notice of new construction nor of any opportunity to express its views on particular projects before a public body with authority to act in response to it."[226] The electric utilities are compelled to plan future expansion to meet projected demands, but such plans are generally kept secret as long as possible because the utilities fear both excessive land acquisition costs and public controversy if they give early disclosure of potential sites.[227]

The administration's bill would have the utilities bear these burdens by requiring them to file annual statements of their plans for future construction. These would be in two parts: a general description of generating station sites and transmission line routes under consideration for 10 to 15 years ahead,[228] and relatively specific plans for sites and routes contemplated within the ensuing five years.[229] Most utilities cur-

224. A Stanford Law School student interviewed the committee chairman and the Public Utility Commissioners. The chairman thought the agreements had "acquired legitimacy before the state and federal agencies," but the PUC labeled them "superfluous and irrelevant" on the grounds that they have exclusive jurisdiction over powerplants. Bores, *Power Plant Siting in California*, Part I, at 9 (unpublished paper, written for a Water Law Course, January 4, 1970, copy on file with S. CAL. L. REV.) The California Supreme Court has held that the Commission's jurisdiction is only concurrent with state environmental agencies.

225. CAL. PUB. UTIL. CODE § 2852 (West Supp. 1971). *See* text accompanying notes 240-42 *infra* for a discussion of the legislation.

226. ELECTRIC POWER AND THE ENVIRONMENT, *supra* note 27, at 15.

227. Considerations Affecting Steam Plant Site Selection, *supra* note 11, at 6. *See* text, Part IV *supra*.

228. H.R. 5277, § 4(a)(1).

229. *Id.* § 4(a)(2).

rently operate somewhat along these lines in cooperation with the FPC. The six Regional Advisory Committees appointed by the FPC in 1965[230] to up-date the National Power Survey are producing 10- and 20-year planning reports.[231] These reports and the National Power Survey are not, however, intended as blueprints or to compel the construction of particular facilities.[232] They represent only such information as the regional power pools, reliability councils, and individual utilities contribute.

The pending legislation would require a utility to go beyond these efforts by (1) filing a current plan annually,[233] (2) distributing the plan to public agencies and environmental groups,[234] and (3) conforming its applications for new facility construction permits to sites identified in the plan, except for good cause.[235] Furthermore, the site certifying agency would review each planning document[236] and would hold a public hearing[237] concerning each site or route identified in the fairly specific five-year plan. After the hearing, a site may be ordered deleted from the utility's five-year inventory if its development would "unduly impair important environmental values."[238] This standard could be interpreted either as a sop to soothe the more troglodytic utility executives or as a means of shifting the burden of proof to opponents of the plant. In our opinion it will accomplish the latter.

There is no reference to a site's relationship to power needs. The bill's initial description of the five-year plan refers to an "inventory of sites for all plants on which construction *is to be commenced* in the succeeding five years. . . ."[239] But the omission of any convenience-and-necessity test in the standards for approving the five-year inventory implies that the inventory may exceed actual needs. As such, it might seem proper to have the environmental agencies conduct the review. But the administration's bill calls for review by the multi-interest siting council, which theoretically will have a balance of environmental and energy production interests. For a public utilities commissioner to vote on what

230. FPC Order No. 383-2, Jan. 10, 1966, 35 FPC 58 (1966).

231. *E.g.*, Northeast Regional Advisory Committee, Electric Power in the Northeast —1970—1980—1990 (1968).

232. FPC Order No. 383-2.

233. H.R. 5277 § 4(a), 92d Cong., 1st Sess. (1971).

234. *Id.* § 4(b).

235. *Id.* § 6(b).

236. *Id.* § 8(a).

237. *Id.* § 8(c).

238. *Id.*

239. *Id.* § 4(a)(2) (emphasis added).

constitutes undue impairment of important environmental values will undoubtedly trouble some environmentalists.

California's Powerplant Siting Coordination Act of 1970 directs the Resources Agency to develop a 20-year plan for the "optimum location" of generating sites in the state,[240] which are defined as "locations deemed suitable from an environmental standpoint."[241] The Resources Agency must also make choice-of-fuel decisions.

> The plan shall contain recommendations of the type of fuel to be used in the generation of electric power at each generating facility location identified in the plan so that the least deleterious effect on the environment is achieved consistent with reasonable economy and efficiency of operation.[242]

To give choice-of-site planning responsibility to a state natural resources department, as California has done to some extent, may actually lessen the effectiveness of a natural resources department in affecting site selection. The state resource agencies (such as fish and game and water quality) have responded fairly effectively to power plant proposals by raising new questions, urging additional environmental studies, buying time and forcing design concessions. To put these agencies in charge of selecting new sites could deprive the public of the principal source of critical outside appraisal. The agencies will be pressured to plan enough sites to avoid blackouts and will then be required to defend their selections. An electric utility could logically conclude that state-run site selection was to its own best advantage.

An optimum middle ground between the positions of the Energy Policy Staff and the State of California may give the state resources agencies a planning responsibility, but not for selecting new sites. Rather, the agencies would prepare and maintain a "relative-impacts" plan, an inventory of the resource values of feasible sites and the sensitivity of those values to the side-effects of new bulk power supply facilities. Under this procedure much important data would have been as-

240. CAL. PUB. UTIL. CODE § 2852 (West Supp. 1971).

241. *Id.* § 2853. California has begun to designate areas of the state which should not be the site of public utility plants or transmission lines. The Agriculture Reserve Act states that a utility facility should not be located in an established reserve "if there is other land on which it is feasible to locate the public improvement." CAL. GOV'T CODE § 51292 (West Supp. 1971). However, this section is only a policy that the public utilities commission must consider along with all other relevant criteria in deciding whether to issue a certificate of public convenience and necessity, and does not apply if the facility has been approved by the commission. *Id.* at § 51293(c).

242. CAL. PUB. UTIL. CODE § 2854 (West Supp. 1971).

sembled before the application from the utility. This process would be somewhat analogous to the planning principles of Ian McHarg, where development-sensitive areas are progressively blocked out on the map until the most developable areas remain.[243]

In its planning provisions, the 1971 Maryland statute combines elements of the proposed federal policy with a "relative-impacts" approach.[244] The Public Service Commission proposes "possible and proposed" sites on the basis of plans drawn by the utilities in an annual 10-year plan submitted to the Secretary of Natural Resources,[245] who exercises an environmental review of these sites.[246] The Secretary may classify a site as unsuitable from an environmental standpoint after a preliminary investigation[247] if the relevant utility cannot offer substantial evidence to the contrary.[248] The effect of an unsuitable rating is not significant: the site is deleted from the plan for the year in which it was proposed, but it is not prevented from being included in subsequent 10-year plans. It is unfortunate that the promulgation of the 10-year plans and the licensing process were not more closely related. For example, if the utilities were required to file applications only for sites included in the currently approved 10-year plan (except for good cause shown), or if the plan represented some prima facie evidence of suitability, the planning provision might represent some substantial contribution to early airing of potential environmental problems.[249] As it stands, however, the utility has no incentive to divulge its plans with the specificity which the legislation appears to anticipate, and the Public Service Commission need not suggest specific sites.[250]

243. I. MCHARG, *supra* note 32, at 34.

244. Maryland Senate Bill No. 540 entitled "Power Plant Siting," signed into law on April 23, 1971.

245. MD. ANN. CODE art. 66C, § 768(1) (Supp. 1971).

246. *Id.* § 768(2).

247. The considerations enumerated in the statute that are to be the basis of the preliminary environmental statement include: the environmental impact at the proposed site; any adverse environmental effects which cannot be avoided should the proposed site be accepted; proposed alternatives to the proposed site; any irreversible and irretrievable commitments of resources which would be involved at the proposed site should it be approved; where appropriate, a discussion of the problems and objections that were raised by other state and federal agencies and local entities; a plan for monitoring environmental effects of the proposed action and provision for remedial actions should the monitoring reveal unanticipated environmental effects of significant adverse consequences.

248. MD. ANN. CODE art. 66C, § 768(2) (Supp. 1971).

249. Of course, there are all sorts of problems with whether a site once included in a plan must continually face review, or whether a site once found suitable can be dropped.

250. The full provision of § 768(1) reads:

The Secretary must also acquire and hold at all times between four and eight sites "reasonably suitable" for power plant development.[251] These sites are to be available, upon request, to an electric utility[252] which may either purchase or lease it on a 99-year basis. Strangely, the lease is not subject to termination if it ceases to be used for the purpose of generating electricity. Most reasonably, however, the Secretary should have the power either to re-convey the property to another utility for power purposes if the original utility discontinued its original use of the site, or in the alternative, to designate the leased lands for other public purposes.

As noted in Section IV, construction of specific generating and transmission facilities requires a certificate of public convenience and necessity from the Public Service Commission (PSC).[253] The PSC must hold a hearing and give "due consideration" to the recommendations of local bodies and other factors including reliability, esthetics, economics, and effects on air and water pollution.[254] After July 1, 1972, utilities must file applications two years in advance of construction,[255] and notice must be given to all interested persons, including various state agencies so they may participate at the public hearing held by the PSC. The agencies may modify, affirm or amend their initial recommendations after the hearings, but the final decision rests with the Commission. Once granted, the certificate constitutes compliance with the state's air emission standards, as well as authority to dredge or

---

The Public Service Commission shall be responsible for assembling and evaluating annually the long-range plans of Maryland's public electric companies regarding generating needs and means for meeting those needs. The Chairman of the Public Service Commission shall, on an annual basis, forward to the Secretary of Natural Resources a ten-year (10) plan of possible and proposed sites, including associated transmission routes, for the construction of new electric power plants within the State of Maryland and extensions of existing plants. The first ten-year (10) plan shall be forwarded on or about January 1, 1972.

251. MD. ANN. CODE art. 66C, § 769(a)(2) (Supp. 1971). The section also provides that one site is to be acquired by July 1, 1974, for *each* electric company generating more than 1000 MW of electric power and that the minimum inventory thereafter shall contain *at least one site* reasonably suitable for *each* such electric company.

The section thus clearly puts a burden on the Secretary to meet the siting requirements of the large utilities within the state. It is not clear whether a company must be generating 1,000 MW within the state to qualify or whether the Secretary and the Fund must maintain an inventory of sites for a qualifying utility if it chooses to purchase out-of-state power. It is further questionable whether the tying together of the state's demand with sites within the state is practical in this day of highly interconnected, regional systems.

252. *Id.* § 769(b).

253. MD. ANN. CODE art. 78, § 54A, 54B (Supp. 1971).

254. *Id.* § 54A.

255. *Id.* § 54B(a).

construct bulkheads in the waters or wetlands of the state and to appropriate and use such waters.[256] The one-stop aspect of the procedure is mitigated somewhat by the specific authorization given to the Secretary of Natural Resources to seek judicial review of the PSC's final decision relative to the environmental aspects of power plant siting.[257]

C. Judicial Review

H.R. 5277 would have a state certifying authority or a federal siting authority make two basic decisions respecting plant sites: to approve or disapprove the inclusion of a site in the five-year inventory and to issue a certificate of "site and facility" upon finding that a site "will not unduly impair important environmental values and will be reasonably necessary to meet electric power needs. . . ." All orders and decisions of the federal siting authority are subject to judicial review under the Administrative Procedure Act, while state decisions are to be "subject to applicable state law."[258] The proposed Act would impose so many decision-making criteria on a state, however, that the scope within which the "applicable state law" might apply seems quite limited.

Some state courts can reject administrative agency findings of fact which are not supported by substantial evidence, while others require findings to be supported by some evidence in the record, or by the weight of the evidence. Although this much latitude may be permissible, many questions of interpretation are bound to arise, *e.g.*, could a state qualify if it proposed that its courts try some issues of fact *de novo*? H.R. 5277 does not speak to this issue despite the potential for inconsistent results between the states. Some states still cling to the pre-*Scenic Hudson* notion of "agrieved parties" while others would readily grant standing to conservation organizations and similar parties to seek review. Established environmental protection organizations are specifically granted standing by the terms of site selection statutes enacted by New York in 1970 and Connecticut in 1971.[259]

256. *Id.*

257. *Id.* § 90. Probably the most unique aspect of the Maryland statute is its provision for funding environmental studies, investigations, and site procurement. An Environmental Trust Fund is established and funded from a tax levied on each unit of electricity generated in Maryland. *Id.* art. 66C, § 766. It is expected to yield four to six million dollars a year and is to be fully passed on to the electric utility customers. *See* Fiscal Report Senate Bill 540, attached to Comments of the Department of Natural Resources on S.B. 540, and Md. Ann. Code art. 66C, § 766(a) art. 78, § 54B(c) (Supp. 1971).

258. H.R. 5277, 92d Cong., 1st Sess. (1971).

259. N.Y. Pub. Serv. Law § 124 (Supp. 1971); Conn. Pub. Act 575, § 8(b).

The states which have already enacted siting laws have no unusual provisions regarding judicial review. Connecticut provides for appeals to be heard on verbatim records, with the council's findings of fact held conclusive if supported by substantial evidence "unless the court in its discertion determines to find some or all facts de novo."[260] In Washington, gubernatorial approval or rejection of an application is subject to judicial review subject to the state's administrative procedure statute.[261]

The federal judiciary would be given review jurisdiction over thermal power plant siting in four situations carefully specified in H.R. 5277. First, there is jurisdiction to hear a state's appeal from the federal government's denial of a CQP application.[262] Second, there is review of a federal siting agency's decision when that agency has jurisdiction over an application for a CSF.[263] Third, the holder of a CSF may acquire necessary land through quick-taking eminent domain proceedings in federal courts.[264] And fourth, the federal courts are empowered to enforce the Act through civil and criminal penalties.[265]

As previously noted, the exemption from NEPA's § 102(2)(c) is conditioned upon the siting council having procedures "substantially comparable" to those developed for the preparation of environmental impact statements. Whether the reviewability of NEPA impact statements in federal courts, as established by a number of recent cases, would carry over to "substantially comparable" impact statements under the Power Plant Siting Act is a quesion which the bill does not answer. Two issues could arise and be cognizable in a federal court: first, whether a state's procedure was in fact substantially comparable to NEPA review procedures, and second, whether a particular statement was sufficiently detailed to satisfy the substantive requirements of the NEPA.

CONCLUSION

Although there is a need to evaluate utility pricing policies which encourage the use of electricity, the construction of a substantial num-

260. CONN. PUB. ACT 575, § 11.
261. WASH. ch. 45, § 14(1), 41st Legis. 2nd ex. sess. (1970).
262. H.R. 5277, § 5(e), 92d Cong., 1st Sess. (1971).
263. *Id.* § 15.
264. *Id.* § 10.
265. *Id.* § 17.

ber of new power plants must be assumed. Because of the demands for increased energy production we must restructure the existing regulatory institutions or create new ones to undertake the difficult task of accommodating national energy and environmental policies. Some states have moved in this direction either by expanding the jurisdiction of their public utilities commission or creating power plant siting agencies. However, crucial questions like whether the utility or objectors bear the burden of proof in actions to halt plant construction, the status of water and air quality standards and the weight which will be given to all environmental considerations remain unclear at the present time. The proposed federal power plant siting legislation is a flawed proposal. The provisions on one-stop licensing, burdens of proof on site approval and exemption from NEPA appear to tip the scales in favor of construction and raise questions whether environmental risks of new power plants will be fully evaluated. The bill should be considered at most a starting point for future legislation.

The regulation of large-scale power plants will be a crucial test of the capacity of the administrative process to meet wide-scale demands for giving environmental considerations serious weight in its decision-making. It is by no means clear that existing agencies have this capacity.[266] If they do not, a more fundamental legislative debate over questions such as the desired level of material satisfaction and national industrial output will be in order.

It is at this level that the fundamental problem lies:

> It is very widely (though, be it noted, not universally) recognized that science and technology need to be brought under some more stringent kind of control. But how are they to be controlled, and by whom? The answers given to these questions are very diverse and for the most part unconvincing, even in those studies which under-take a more or less systematic inquiry to the relation between technology and society, as distinct from the mass of journalistic and sensational comment in which the whole subject threatens to become engulfed.
>
> Their unsatisfactory character is due on one side to the absence, in most cases, of any theory of society that would provide a frame for considering science and technology as social phenomena, and on the other side to the lack of any clearly conceived

266. For a plea for the use of the adversary process to examine the need for energy production and a rejection of the expertise of administrative agencies, *see* Sive, *supra* note 4.

social end, a desirable form of human society, which science and technology, if properly controlled, ought to help us achieve. It is idle to blame urban planners, corporation executives (whether public or private), bureaucrats, or miscellaneous others for their misdeeds, when there exists no political consciousness capable of defining a form of social life to which we should be aspiring.[267]

267. Bottomore, *Machines Without Cause*, 18 N.Y. REV. OF BOOKS 12 (Nov. 4, 1971).